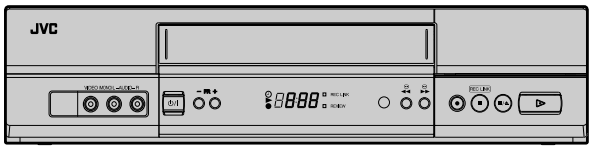
JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

HR-J798AH



G-CODE™ / SHOWVIEW™
VHS PAL NTSC SQPB
Hi-Fi

For disassembling and assembling of MECHANISM ASSEMBLY, refer to the SERVICE MANUAL No.86700(MECHANISM ASSEMBLY).

SPECIFICATIONS

GENERAL

Power requirement	
Rating	: AC110V–240V∿, 50Hz/60Hz
Operating	:AC90V–260V∿, 50Hz/60Hz
Power consumption	: 16 W
Temperature	
Operating	: 5°C to 40°C
Storage	: –20°C to 60°C
Operating position	: Horizontal only
Dimensions (WxHxD)	: 400mm x 94mm x 265mm
Weight	: 2.9kg
Format	: VHS standard
Maximum recording time	
(SP)	: 240min. with E-240 video cassette (PAL/MESECAM)
	: 160min. with T-160 video cassette (NTSC)
(LP)	: 480min. with E-240 video cassette (PAL/MESECAM)
(EP)	: 480 min. with T-160 video cassette (NTSC)

VIDEO/AUDIO

Signal system	: PAL-type colour signal and CCIR monochrome signal, 625lines 50 fields
	: NTSC colour and EIA monochrome signals, 525 lines/60fields
Recording system	: DA-4 (Double Azimuth) head helical scan system
Signal-to-noise ratio	: 45dB
Horizontal resolution	:250lines (PAL/MESECAM)
	: 220lines (NTSC)
Frequency range	
Normal audio	: 70 Hz to 10,000 Hz
Hi-Fi audio	: 20 Hz to 20,000 Hz
Input/Output	: RCA connectors (INx2, OUTx1)

TUNER/TIMER

TV channel storage capacity	: 99 positions (+AUX position)
Tuning system	: Frequency synthesized tuner
Channel coverage	
VHF	: (Low) 42MHz – 175MHz (High)175MHz – 470MHz
UHF	: 470 MHz – 870 MHz
Aerial output	: UHF channels (Adjustable E28 – E60)
Memory backup time	: Approx. 6 months Estimated figure based on supplied fresh battery; actual performance may differ.

ACCESSORIES

Provided accessories	: RF cable, Lithium battery CR2025, Infrared remote control unit, "R6/UM-3" batteryx2,

Specifications shown are for SP mode unless specified otherwise.
E. & O.E. Design and specifications subject to change without notice.

HR-J798AH V16D1

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2003/07

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Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

●Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded ( ) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape 3) Spacers 5) Barrier
   2) PVC tubing 4) Insulation sheets for transistors

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

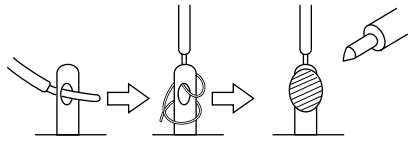


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

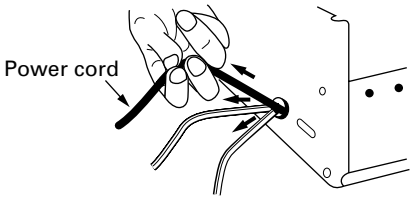


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

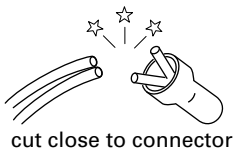


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

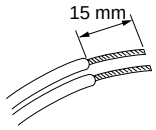


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

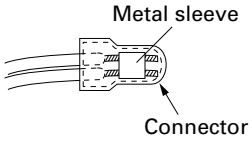


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

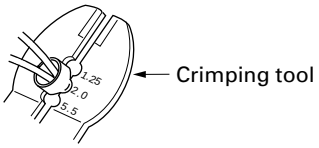


Fig.6

(5) Check the four points noted in Fig.7.

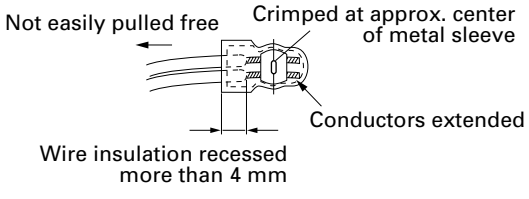

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

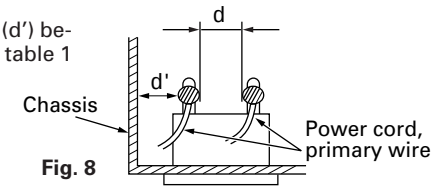


Fig. 8

4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method : (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

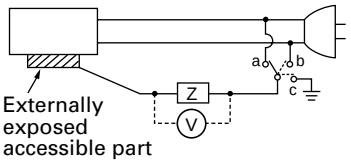


Fig. 9

5. Grounding (Class Ⅰ model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

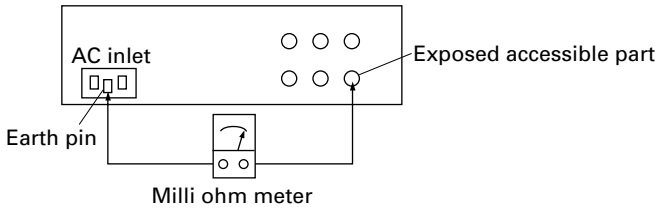


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 miute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	1 MΩ ≦ R ≦ 12 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class Ⅱ) AC 1.5 kV 1 minute (Class Ⅰ)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 µF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

SECTION 1
DISASSEMBLY

1.1 Manually removing the cassette tape

If you cannot remove the cassette tape which is loaded because of any electrical or mechanical failures, manually remove it by taking the following steps.

(1) Unplug the power cord plug from the power outlet.
(2) Refer to the disassembly procedure of the VCR and perform the disassembly of the major parts before removing the mechanism assembly. (See Fig. 1-1a)

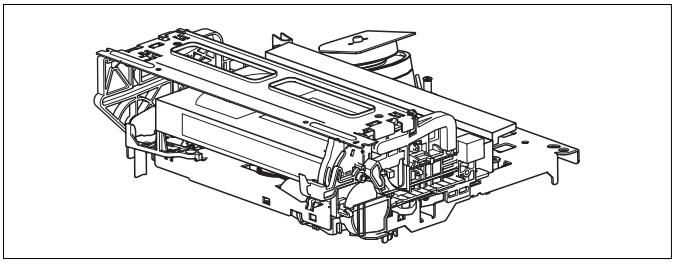


Fig. 1-1a

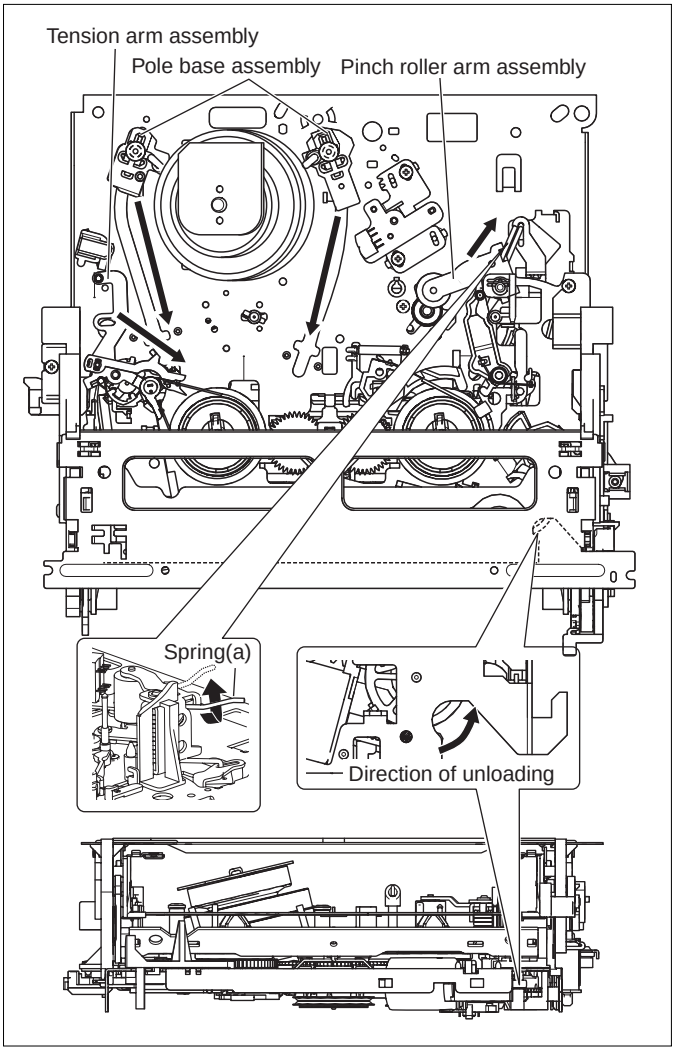


Fig. 1-1b

(3) Unload the pole base assembly by manually turning the gear of the loading motor until the pole base assembly is hidden behind the cassette lid. In doing so, hold the tape by the hand to keep the slack away from any grease. (See Fig. 1-1b.)
In case of mechanical failures, while keeping the tension arm assembly free from tension, pull out the tape on the pole base assembly. Take the spring(a) of the pinch roller arm assembly off the hook, and detach it from the tape.
(4) Remove the screw (a) of the side frame (L/R).
(5) Hold the slack tape and cassette cover together, lift the cassette tape, top frame, cassette holder and side frames (L, R) together from the rear and remove them by disengaging the hooks (a) and (b).

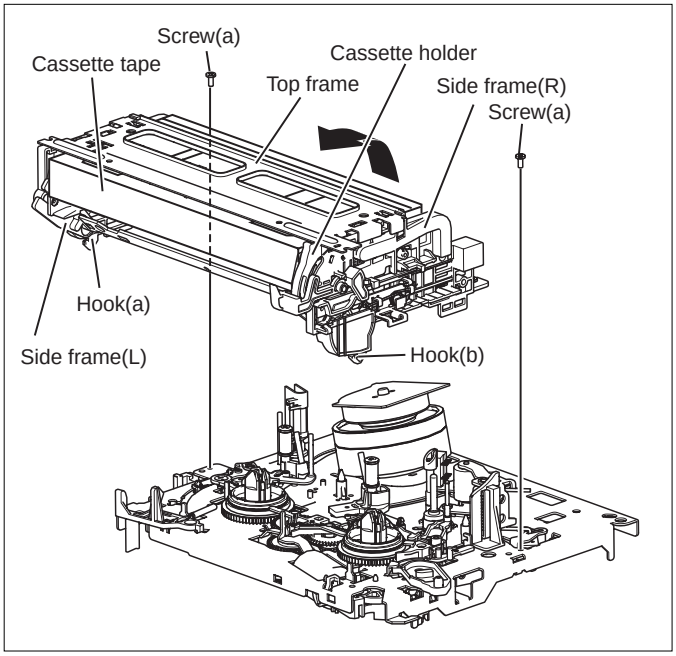


Fig. 1-1c

(6) Take up the slack of the tape into the cassette. This completes removal of the cassette tape.

1.2 Removing the major parts

1.2.1 How to read the procedure table

This table shows the steps for disassembly of the externally furnished parts and board assemblies. Reverse these steps when re-assembling them.

<Example>

Step/ Loc No.	Part Name	Fig. No.	Point	Note
[1]	Top cover,	1-3a	4(S1a),(S1b),3(L1a), 2(SD1a),(P1a),(W1a), CN1(WR1a),	<Note 1a>
	Bracket		2(S1c)	

(1) (2) (3) (4) (5)

(1) Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order.
These numbers are also used as the identification (location) No. of parts Figures.
(2) Part name to be removed or installed.
(3) Fig. No. showing procedure or part location.
(4) Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
P= Spring, W= Washer, S= Screw, L= Locking tab, SD= Solder, CN**(WR**)= Remove the wire (WR**) from the connector (CN**).

Note:

- ***The bracketed ( ) WR of the connector symbol are assigned nos. in priority order and do not correspond to those on the spare parts list.***

(5) Adjustment information for installation

1.2.2 Disassembly procedure

Step/ Loc No.	Part Name	Fig. No.	Point	Note
[1]	Top cover	1-2-2d	2(S1a), (S1b)	
[2]	Front panel assembly	1-2-2d	2(S2a), 2(L2a),4(L2b), 3(L2c)	<Note 2a> <Note 2b>
[3]	Mechanism assembly	1-2-2d	CN2001(WR3a), (S3a), (S3b)	<Note 2a> <Note 3a> <Note 3b> <Note 3c>
	(Drum assembly)		CN1(WR3b), (S3x), (S3y), (S3z)	
	(H. cleaner assembly)		2(L3c)	
[4]	Main board assembly	1-2-2d	(L4a)	

<Note 2a>

- Be careful not to damage the connector and wire etc. during connection and disconnection.
- When connecting the flat wire to the connector, be careful with the flat wire direction.

<Note 2b>

- When reattaching the Front panel assembly, make sure that the door opener of the Side frame (R) is lowered in position prior to the reinstallation.
- When reattaching the Front panel assembly, pay careful attention to the switch lever of the Front panel assembly not to make it touch the switch knob of the Main board assembly from the side.
- When reattaching the Front panel assembly, lift the Cassette door slightly.

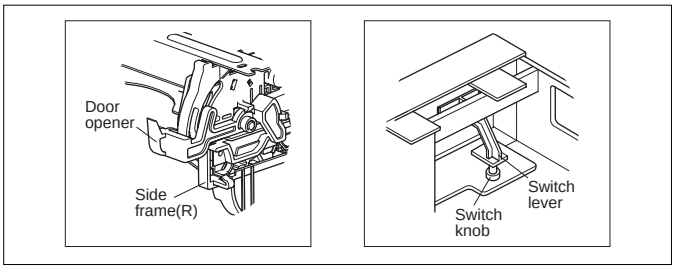


Fig. 1-2-2a

<Note 3a>

- When reattaching the Mechanism assembly, secure the screws (S3a to S3b) in the order of a, b.

<Note 3b>

- When reattaching the Mechanism assembly, be sure to align the phase of the Rotary encoder on the Main board assembly.
- When reattaching the Mechanism assembly, set the “Mechanism assembling mode”. (See “section 2 mechanism”.)
- When reattaching the Mechanism assembly to the Main board assembly, take care not to damage the sensors and switch on the Main board assembly.

<Note 3c>

- When reattaching the Drum assembly, secure the screws (S3x to S3z) in the order of x, y, z.

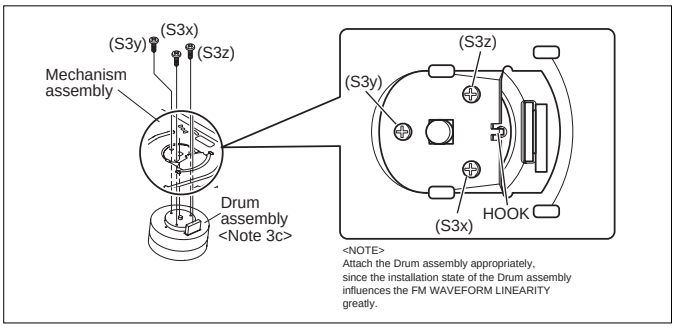


Fig. 1-2-2b

- When handling the drum assembly alone, hold it by the motor or shaft. Be careful not to touch other parts, especially the video heads. Also take care not to damage the connectors.

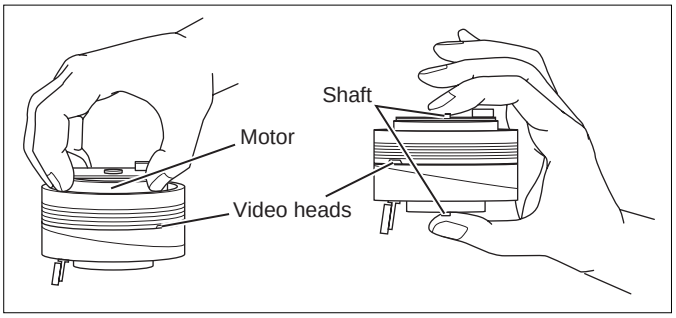


Fig. 1-2-2c

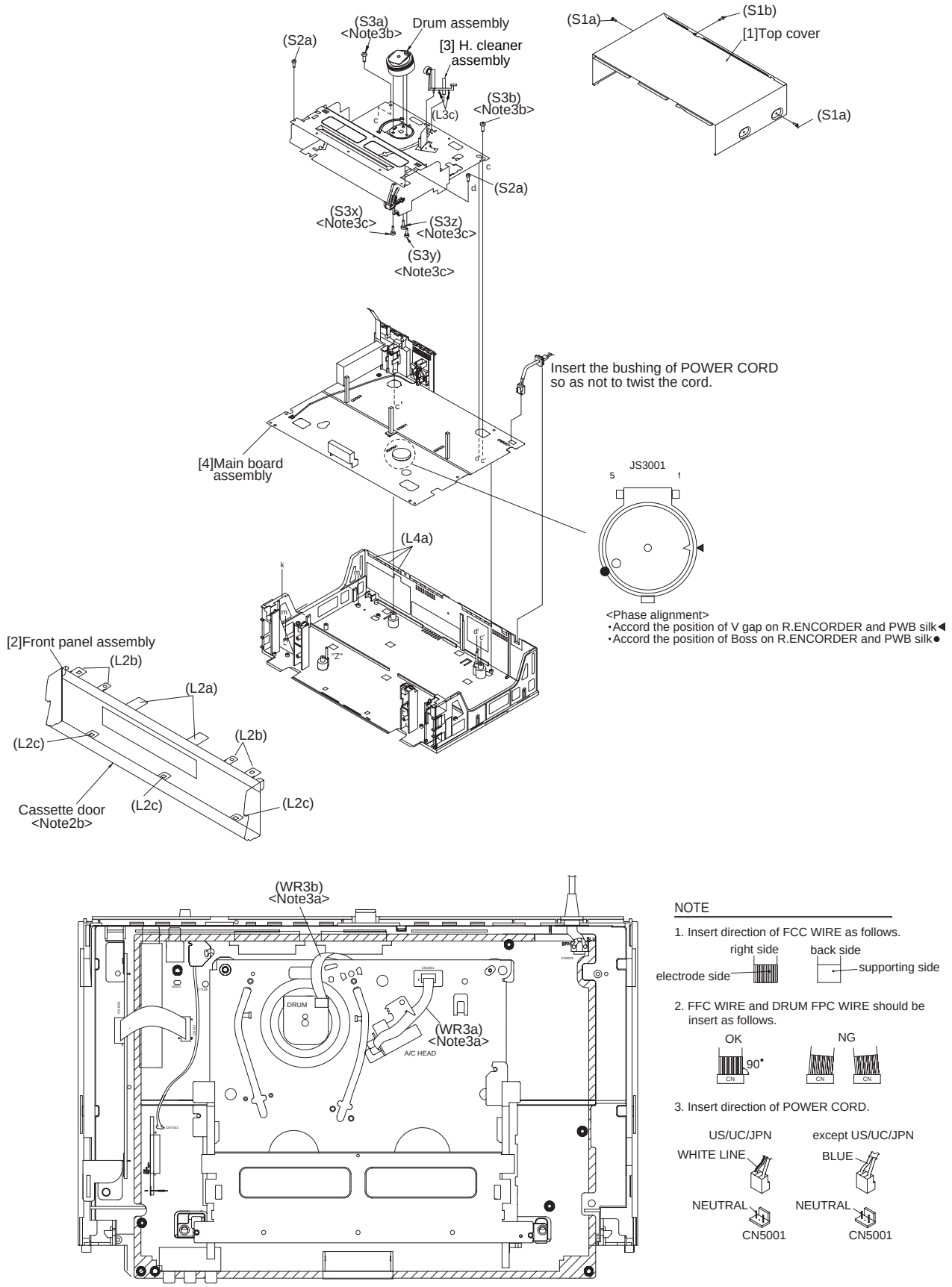

(S1a)
(S1b)
[1]Top cover
(S1a)
(S2a)
(S3a)
<Note3b>
Drum assembly
[3] H. cleaner assembly
(L3c)
(S3b)
<Note3b>
(S2a)
(S3x)
<Note3c>
(S3z)
<Note3c>
(S3y)
<Note3c>
Insert the bushing of POWER CORD so as not to twist the cord.
[4]Main board assembly
JS3001
5
1
(L4a)
<Phase alignment>
・Accord the position of V gap on R.ENCORDER and PWB silk◀
・Accord the position of Boss on R.ENCORDER and PWB silk●
[2]Front panel assembly
(L2b)
(L2a)
(L2c)
(L2b)
Cassette door
<Note2b>
(L2c)
(L2c)
(WR3b)
<Note3a>
DRUM
(WR3a)
<Note3a>
A/C HEAD
NOTE
1. Insert direction of FCC WIRE as follows.
right side
back side
electrode side
supporting side
2. FFC WIRE and DRUM FPC WIRE should be insert as follows.
OK
NG
90°
CN
CN
CN
3. Insert direction of POWER CORD.
US/UC/JPN
except US/UC/JPN
WHITE LINE
BLUE
NEUTRAL
NEUTRAL
CN5001
CN5001

Fig. 1-2-2d

1.3 Emergency display function

This unit saves details of the last two emergencies as the EMG history and allows the status of the VCR and the mechanism of each emergency to be shown both on the display and as OSD information.
When using the emergency function, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received).

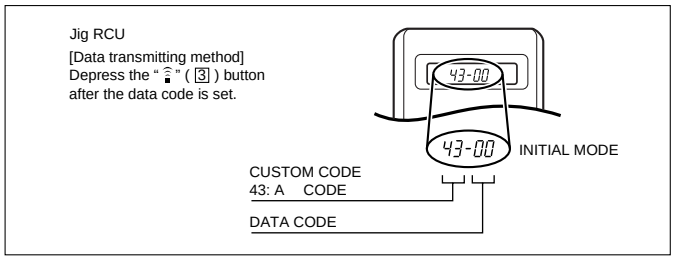


Fig. 1-3a Jig RCU [PTU94023B]

1.3.1 Displaying the EMG information

The EMG detail of information can be displayed by transmitting the code "59" from the Jig RCU.

Note:

- ***The EMG detail information <1><2> show the information on the latest EMG.***
  It becomes " – – : – – : – –" when there is no latest EMG record.

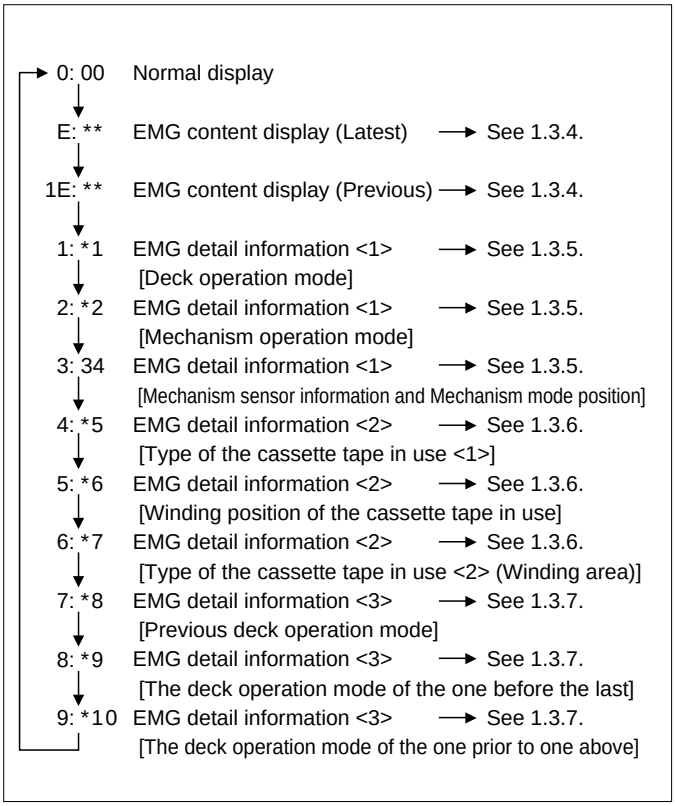

0: 00 Normal display
E: ** EMG content display (Latest) → See 1.3.4.
1E: ** EMG content display (Previous) → See 1.3.4.
1: *1 EMG detail information <1> → See 1.3.5.
[Deck operation mode]
2: *2 EMG detail information <1> → See 1.3.5.
[Mechanism operation mode]
3: 34 EMG detail information <1> → See 1.3.5.
[Mechanism sensor information and Mechanism mode position]
4: *5 EMG detail information <2> → See 1.3.6.
[Type of the cassette tape in use <1>]
5: *6 EMG detail information <2> → See 1.3.6.
[Winding position of the cassette tape in use]
6: *7 EMG detail information <2> → See 1.3.6.
[Type of the cassette tape in use <2> (Winding area)]
7: *8 EMG detail information <3> → See 1.3.7.
[Previous deck operation mode]
8: *9 EMG detail information <3> → See 1.3.7.
[The deck operation mode of the one before the last]
9: *10 EMG detail information <3> → See 1.3.7.
[The deck operation mode of the one prior to one above]

Fig. 1-3-1a EMG display of 7segment LED display model

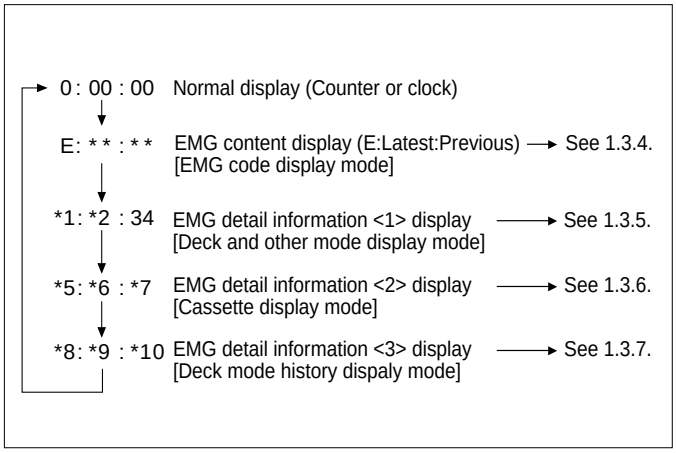

0 : 00 : 00 Normal display (Counter or clock)
E: * * : * * EMG content display (E:Latest:Previous) → See 1.3.4.
[EMG code display mode]
*1: *2 : 34 EMG detail information <1> display → See 1.3.5.
[Deck and other mode display mode]
*5: *6 : *7 EMG detail information <2> display → See 1.3.6.
[Cassette display mode]
*8: *9 : *10 EMG detail information <3> display → See 1.3.7.
[Deck mode history dispaly mode]

Fig. 1-3-1b EMG display of FDP display model

<Reference> EMG display of FDP display mode

(1) Transmit the code "59" from the Jig RCU.
The FDP shows the EMG content in the form of "E: * * : * * ".

<Example 1> E : 01 : 03
Previous EMG
Latest EMG

<Example 2> E : – – : – – ← No EMG record

(2) Transmit the code "59" from the Jig RCU again.
The FDP shows the EMG detail information <1> in the form of " * 1 : * 2 : 34 ".
- * 1 : Deck operation mode at the moment of EMG
- * 2 : Mechanism operation mode at the moment of EMG
- 3– : Mechanism sensor information at the moment of EMG
- –4 : Mechanism mode position at the moment of EMG

(3) Transmit the code "59" from the Jig RCU once again.
The FDP shows the EMG detail information <2> in the form of " * 5 : * 6 : * 7 ".
- * 5 : Type of the cassette tape in use <1> .
- * 6 : Winding position of the cassette tape in use
- * 7 : Type of the cassette tape in use <2> (Winding area)

(4) Transmit the code "59" from the Jig RCU once again.
The FDP shows the EMG detail information <3> in the form of "*8 : *9 : *10".
- * 8 : Previous deck operation mode at the moment of EMG
- * 9 : The deck operation mode of the one before the last at the moment of EMG
- * 10 : The deck operation mode of the one prior to one above at the moment of EMG

(5) Transmit the code "59" from the Jig RCU once again to reset the display.

1.3.2 Clearing the EMG history

(1) Display the EMG history.
(2) Transmit the code "36" from the Jig RCU.
(3) Reset the EMG display.

1.3.3 Details of the OSD display in the EMG display mode

During the EMG display, the OSD shows the data on the deck mode, etc. The details of the display contents are as follows.

Notes:

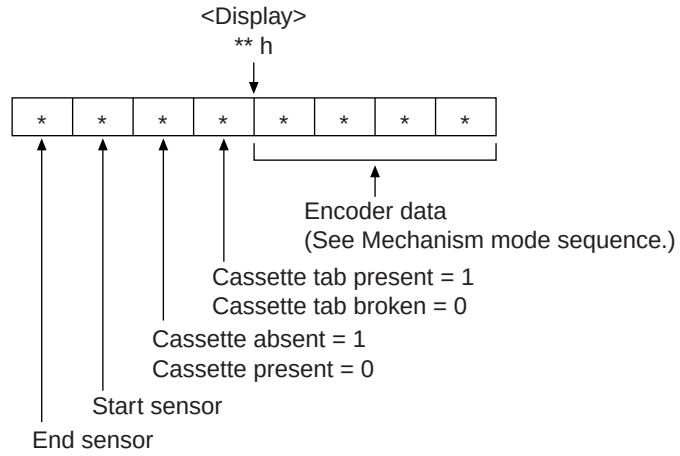
- ***The display is variable depending on the part No. of the System Control microcomputer (IC3001) built into the VCR. In the following, refer to the figure carrying the same two characters as the top two characters of the part number of your IC.***
- ***The sensor information in the OSD display contents is partially different from the mechanism sensor information in EMG detail information <1>.***

[For MN* only]

AA	BB	CC	DD	EE
FF	GG	HH	I I	J J
KK	L L	MM	NN	OO
PP	QQ	RR	SS	TT
UU	VV	WW	XX	YY

A A : Deck operation mode (See EMG detail information <1>.)
B B : Mechanism operation mode (See EMG detail of information <1>.)
C C : Mechanism transition flag
D D : Capstan motor control status
E E : Loading motor control status
F F : Sensor information (See sensor information details.)
GG : Capstan motor speed
HH : Key code (JVC code)
I I : Supply reel winding diameter data, higher 8 bits.
J J : Supply reel winding diameter data, lower 8 bits.
KK : Mechanism sensor information & mechanism mode position (See EMG detail of information <1>.)
L L : Tape speed data, higher 8 bits.
MM : Tape speed data, lower 8 bits.
N N : Cassette tape type <2>, higher 8 bits. (See EMG detail of information <2>.)
OO : Cassette tape type <2>, lower 8 bits. (See EMG detail of information <2>.)
P P : General data display area
| |
Y Y : General data display area

***FF: Sensor information details**

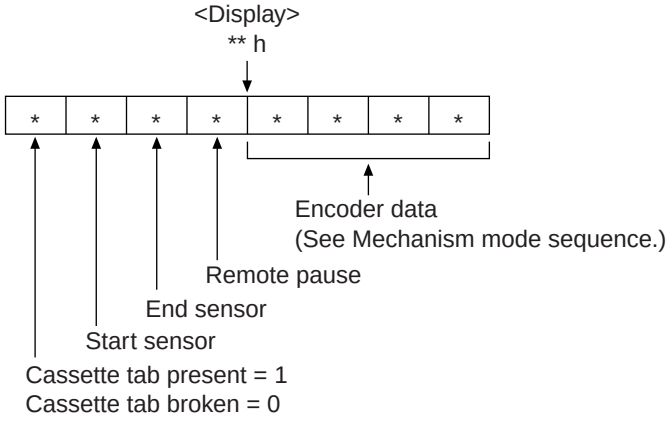


[For *HD only]

AA	BB	CC
DD	EE	FF
GGGG	HHHH	
I I	J J J J	
KKKK	L L L L	MMMM
ROM No.		

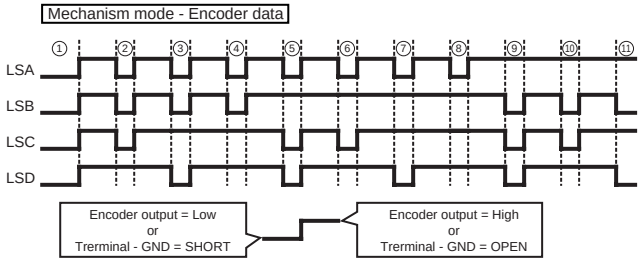
A A : Key code (JVC code)
B B : Deck operation mode (See EMG detail information <1>.)
C C : Mechanism operation mode (See EMG detail information <1>.)
D D : Sensor information (See sensor information details.)
E E : Capstan motor speed (Search, double speed)
F F : Tracking value
GGGG : Cassette tape type <2>, 16 bits. (See EMG detail information <2>.)
HHHH : Supply reel winding diameter data
I I : Capstan motor speed (FF/REW, double speed)
J J J J : Tape speed data, lower 8 bits.
K K K K : General data display area
L L L L : General data display area
MMMM : General data display area

***DD: Sensor information details**

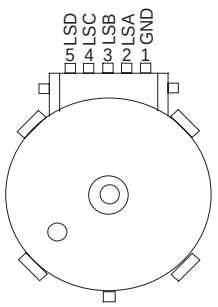


[For both MN*/HD*]

Mechanism mode sequence



No.	Position	Encoder data
①	EJECT	0 h = 0000
②	EJECT1	1 h = 0001
③	EJECT2	2 h = 0010
④	ULSTOP	3 h = 0011
⑤	UPPER	4 h = 0100
⑥	ONSTOP(PLAY)	5 h = 0101
⑦	FWD/SS	6 h = 0110
⑧	REV/SS	7 h = 0111
⑨	OFFSTOP	8 h = 1000
⑩	FFREW-BRAKE	9 h = 1001
⑪	FFREW	A h = 1010
⑫	MIDDLE	F h = 1111



1.3.4 EMG content description

Note: ***EMG contents "E08/E09" are for the model with Dynamic Drum (DD).***

FDP	CONTENT	CAUSE
E01: Loading EMG	If the mechanism mode does not change to the next mode within 4 seconds after the loading motor starts rotating in the loading direction, while the mechanism is in the after-loading position (with the tape up against the pole base), [E:01] is identified and the power is switched OFF. However, if the tape loading is not completed within 4 seconds after the loading motor starts rotating in the loading direction, the tape is simply unloaded and ejected. No EMG data is recorded in this case.	1. The mechanism is locked in the middle of the mode transition during a tape loading operation. 2. The mechanism overruns during the tape loading operation because the SYSCON cannot recognize the mechanism mode normally. This problem is due to a cause such as a rotary encoder failure. 3. Power is not supplied to the loading MDA. (M12V/Vcc/Vref/ICP are disconnected in the middle.)
E02: Unloading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the unloading direction, [E:02] is identified and the power is turned off.	1. The mechanism is locked in the middle of mode transition. 2. Without an eject signal being sent from the SYSCON, unloading is attempted (i.e. Ejection is attempted while the tape is still inside the mechanism.) because the SYSCON cannot recognize the mechanism mode normally. This is due to a cause such as a rotary encoder failure. (Mechanism position: UPPER) 3. Power is not supplied to the loading MDA. (M12V/Vcc/Vref/ICP are disconnected in the middle.)
E03: Take Up Reel Pulse EMG	When the falling edje of the take-up reel pulse has not been generated for more than 4 seconds in the capstan rotating mode, [E:03] is identified, the pinch rollers are turned off and stopped, and the power is turned off. In this case, however, the mechanism should be in position after tape loading. Note that the reel EMG is not detected during Slow/Frame advance operations.	1. The take-up reel pulse is not generated in the FWD transport modes (PLAY/FWD SEARCH/FF, etc.) because; 1)The idler gear is not meshed with the take-up reel gear because the mechanism malfunctions for some reason. 2)The idler gear is meshed with the take-up reel gear, but incapable of winding due to too large mechanical load (abnormal tension); 3)The reel is rotating normally but an FG pulse is not generated due to the take-up reel sensor failure. 2. The supply reel pulse is not generated in the REV transport modes (REV SEARCH/REW, etc.) because; 1) The idler gear is not meshed with the supply reel gear because the mechanism malfunctions for some reason. 2) The idler gear is meshed with the supply reel gear, but incapable of winding due to too large a mechanical load (abnormal tension); 3) The reel rotates normally but the FG pulse is not generated due to a supply reel sensor failure. 3. Power(SW5V) is not supplied to the reel sensor on the tape winding side.
E04: Drum FG EMG	When the drum FG pulse has not been input for more than 3 seconds in the drum rotating mode, [E:04] is identified, the pinch rollers are turned off and stopped, and the power is turned off.	1. The drum could not start or the drum rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high; 2) The tape is damaged or a foreign object (grease, etc.) adheres to the tape. 2. The drum FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (hall device) of the drum is faulty. 3. The drum control voltage (DRUM CTL V) is not supplied to the MDA. 4. Power (M12V) is not supplied to the drum MDA.
E05: Cassette Eject EMG	If the cassette does not reach the eject position within about 0.7 seconds after the cassette housing has started the cassette ejection operation, [E:05] is identified, the drive direction is reversed to load the tape, the mode is switched to STOP mode with the pinch roller OFF, and the power is switched OFF. During the cassette insertion process, the drive direction is reversed and the cassette is ejected if the tape is not up against the pole base within about 3 seconds after the start of the cassette pulling-in operation. If the cassette does not reach the eject position within about 0.7 seconds after the drive mode reversal operation, [E:05] is identified and the power is switched OFF immediately.	1. The cassette cannot be ejected due to a failure in the drive mechanism of the housing. 2. When the housing load increases during ejection, the loading motor is stopped because of lack of headroom in its drive torque. Housing load increasing factors: Temperature environment (low temperature, etc.), mechanism wear or failure. 3. The sensor/switch for detecting the end of ejection are not functioning normally. 4. The loading motor drive voltage is lower than specified or power (M12V) is not supplied to the motor (MDA). 5. When the user attempted to eject a cassette, a foreign object (or perhaps the user's hand) was caught in the opening of the housing.
E06: Capstan FG EMG	When the capstan FG pulse has not been generated for more than 1 second in the capstan rotating mode, [E:06] is identified, the pinch rollers are turned off and stopped, and the power is turned off.However, the capstan EMG is not detected in SLOW/STILL modes. Note that, if the part number of the System Control IC begins with "MN" or "M3", the capstan EMG is not detected even during the FF/REW operation.	1. The capstan could not start or the capstan rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high (mechanical lock); 2) The tape is damaged or a foreign object (grease, etc.) is adhered to the tape (occurrence of tape entangling, etc.). 2. The capstan FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (MR device) of the capstans is faulty. 3. The capstan control voltage (CAPSTAN CTL V) is not supplied to the MDA. 4. Power (M12V, SW5V) are not supplied to the capstan MDA.
E07: SW Power Short-Circuit EMG	When short-circuiting of the SW power supply with GND has lasted for 0.5 second or more, [E:07] is identified, all the motors are stopped and the power is turned off.	1. The SW 5 V power supply circuit is shorted with GND. 2. The SW 12 V power supply circuit is shorted with GND.
E08: DD Initialized (Absolute Position Sensor) EMG	When DD tilting does not complete in 4 seconds, [E:08] is identified, the tilt motor is stopped and the power is turned off.	1. The absolute value sensor is defective. (The soldered parts have separated.) 2. The pull-up resistor at the absolute sensor output is defective. (The soldered parts have separated.) 3. Contact failure or soldering failure of the pins of the connector (board-to-board) to the absolute value sensor. 4. The absolute value sensor data is not sent to the System Controller CPU.
E09: DD FG EMG	When the DD FG pulse is not generated within 2.5 seconds, [E:09] is identified, the tilt motor is stopped and the power is turned off.	1. The FG sensor is defective. (The soldered parts have separated.) 2. The pull-up resistor at the FG sensor output is defective. (The soldered parts have separated.) 3. Contact failure or soldering failure of the pins of the connector (board-to-board) to the FG sensor. 4. The power (5V) to the sensor is not supplied. (Connection failure/soldering failure) 5. The FG pulse is not sent to the System Controller CPU. 6. The tilt motor is defective. (The soldered parts have separated.) 7. The drive power to the tilt motor is not supplied. (Connection failure/soldering failure) 8. The tilt motor drive MDA - IC is defective. 9. Auto-recovery of the DD tilting cannot take place due to overrun.
E0A: Supply Reel Pulse EMG	When the falling edge of the supply reel pulse has not been generated for more than 10 seconds in the capstan rotating mode, [E:0A] is identified and the cassette is ejected (but the power is not turned off). In this case, however, the mechanism should be in the position after tape loading (with the tape up against the pole base). Also note that the reel EMG is not detected during Slow/Frame advance operations.	1. The supply reel pulse is not generated in the FWD transport mode (PLAY/FWD SEARCH/FF, etc.) because; 1) PLAY/FWD or SEARCH/FF is started while the tape in the inserted cassette is cut in the middle; 2) A mechanical factor caused tape slack inside and outside the supply reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the FWD transport, so the pulse is not generated until then; 3) The reel is rotating normally but the FG pulse is not generated due to a supply reel sensor failure. 2. The take-up reel pulse is not generated in the REV transport mode (REV SEARCH/REW, etc.). 1) REV SEARCH/REW is started when the tape in the inserted cassette has been cut in the middle; 2) A mechanical factor caused tape slack inside and outside the take-up reel side of the cassette shell. In this case, the take-up reel will not rotate until the tape slack is removed by the REV transport, so the pulse will not be generated until that time; 3) The reel is rotating normally but the FG pulse is not generated due to a take-up reel sensor failure. 3. The power (SW 5V) to a reel sensor is not supplied.
EU1: Head clog warning history	Presupposing the presence of the control pulse output in the PLAY mode, when the value obtained by mixing the two V.FM output channels (without regard to the A.FM output) has remained below a certain threshold level for more than 10 seconds, [E:U1] is identified and recorded in the emergency history. During the period in which the head clog is detected, the FDP shows "U:01" and the OSD repeats the "3 seconds of warning display" and the "7 seconds of noise picture display" alternately. EMG code : "E:C1" or "E:U1" / FDP : "U:01" / OSD : "Try cleaning tape." or "Use cleaning cassette." The head clog warning is reset when the above-mentioned threshold has been exceeded for more than 2 seconds or the mode is changed to another mode than PLAY.	

Table 1-3-4a

1.3.5 EMG detail information <1>

The status (electrical operation mode) of the VCR and the status (mechanism operation mode/sensor information) of the mechanism in the latest EMG can be confirmed based on the figure in EMG detail information <1> .

[FDP/OSD display]

*1 : *2 : 34

*1 : Deck operation mode at the moment of EMG
*2 : Mechanism operation mode at the moment of EMG
3– : Mechanism sensor information at the moment of EMG
–4 : Mechanism mode position at the moment of EMG

Note:

- ***For EMG detailed information <1>, the content of the code that is shown on the display (or OSD) differs depending on the parts number of the system control microprocessor (IC3001) of the VCR. The system control microprocessor parts number starts with two letters, refer these to the corresponding table.***

***1 : Deck operation mode**
[Common table of MN* and HD]

Display		Deck operation mode
MN*	HD*	
00	-	Mechanism being initialized
01	00	STOP with pinch roller pressure off (or tape present with P.OFF)
02	01	STOP with pinch roller pressure on
03	-	POWER OFF as a result of EMG
04	04	PLAY (Normal playback)
0C	0E	REC
10	11	Cassette ejected
20	22	FF
21	-	Tape fully loaded, START sensor ON, short FF
22	-	Cassette identification FWD SEARCH before transition to FF (SP x7-speed)
24	26	FWD SEARCH (variable speed) including x2-speed
2C	2E	INSERT REC
40	43	REW
42	-	Cassette identification REV SEARCH before transition to REW (SP x7-speed)
44	47	REV SEARCH (variable speed)
4C	4C	AUDIO DUB
6C	6E	INSERT REC (VIDEO + AUDIO)
84	84	FWD STILL / SLOW
85	85	REV STILL / SLOW
8C	8F	REC PAUSE
8D	-	Back spacing
8E	-	Forward spacing (FWD transport mode with BEST function)
AC	AF	INSERT REC PAUSE
AD	-	INSERT REC back spacing
CC	CD	AUDIO DUB PAUSE
CD	-	AUDIO DUB back spacing
EC	EF	INSERT REC (VIDEO + AUDIO) PAUSE
ED	-	INSERT REC (VIDEO + AUDIO) back spacing

***2 : Mechanism operation mode**
[Table of MN*]

Display	Mechanism operation mode
00	Command standby (No command to be executed)
01	Immediate Power OFF after EMG occurrence
02	Loading from an intermediate position during mechanism initialization
03	Unloading due to EMG occurrence during mechanism initialization
04	Ejecting cassette (ULSTOP to EJECT)
05	Inserting cassette (EJECT to ULSTOP)
06	Loading tape (ULSTOP to PLAY)
07	Unloading tape (PLAY to ULSTOP)
08	Transition from pinch roller ON to STOP
09	Transition from pinch roller OFF to STOP (PLAY to OFFSTOP)
0A	Transition from pinch roller OFF to STOP at power OFF
0B	Transition from pinch roller ON to STOP at power ON
0C	Transition to PLAY
0D	Transition to Search FF
0E	Transition to REC
0F	Transition to FWD STILL/SLOW
10	Transition to REV STILL/SLOW
11	Transition to Search REV
12	Transition from FF/REW to STOP
13	Transition to FF
14	Transition to REW
15	Tape end detection processing during loading
16	Short FWD/REV at tape sensor ON during unloading
17	Transition to FF/REW brake mode

[Table of HD*]

Display	Mechanism operation mode
00	STOP with pinch roller pressure off
01	STOP with pinch roller pressure on
02	U/L STOP (or tape being loaded)
04	PLAY (Normal playback)
05	PLAY (x1-speed playback using JOG)
0E	REC
11	Cassette ejected
22	FF
26	FWD SEARCH (variable speed) including x2-speed
2E	INSERT REC
43	REW
47	REV SEARCH
4C	AUDIO DUB
6E	INSERT REC (VIDEO + AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8F	REC PAUSE
AF	INSERT REC PAUSE
C7	REV SEARCH (x1-speed reverse playback using JOG)
CD	AUDIO DUB PAUSE
EF	INSERT REC (VIDEO + AUDIO) PAUSE
F0	Mechanism being initialized
F1	POWER OFF as a result of EMG
F2	Cassette being inserted
F3	Cassette being ejected
F4	Transition from STOP with pinch roller pressure on to STOP with pinch roller pressure off
F5	Transition from STOP with pinch roller pressure on to PLAY
F6	Transition from STOP with pinch roller pressure on to REC
F7	Cassette type detection SEARCH before FF/REW is being executed
F8	Tape being unloaded
F9	Transition from STOP with pinch roller pressure off to STOP with pinch roller pressure on
FA	Transition from STOP with pinch roller pressure off to FF/REW
FB	Transition from STOP with pinch roller pressure off to REC.P (T.REC,etc.)
FC	Transition from STOP with pinch roller pressure off to cassette type detection SEARCH
FD	Short REV being executed after END sensor on during unloading
FE	Tension loosening being executed after tape loading (STOP with pinch roller pressure on)
FF	Tape being unloaded

3– : Mechanism sensor information
[Common table of MN* and HD*]

Display	Mechanism sensor information			
	REC safety SW	Start sensor	End sensor	Mechansim position sensor
0-	Tab broken	ON	ON	ON
1-	Tab broken	ON	ON	OFF
2-	Tab broken	ON	OFF	ON
3-	Tab broken	ON	OFF	OFF
4-	Tab present	OFF	ON	ON
5-	Tab present	OFF	ON	OFF
6-	Tab present	OFF	OFF	ON
7-	Tab present	OFF	OFF	OFF
8-	Tab broken	ON	ON	ON
9-	Tab broken	ON	ON	OFF
A-	Tab broken	ON	OFF	ON
B-	Tab broken	ON	OFF	OFF
C-	Tab present	OFF	ON	ON
D-	Tab present	OFF	ON	OFF
E-	Tab present	OFF	OFF	ON
F-	Tab present	OFF	OFF	OFF

Tab broken = 0 Sensor ON = 0 Sensor ON = 0
Tab present = 1 sensor OFF = 1 Sensor OFF = 1

–4 : Mechanism mode position
[Common table of MN* and HD*]

Mechanism sensor information	Display	Deck operation mode	
Even number (0, 2, 4, 6, 8, A, C, E)	-0	Not established	
	-1	EJECT	EJECT position
	-2	EJECT-EJECT1	Intermodal position
	-3	EJECT1	EJECT1 position
	-4	EJECT1-EJECT2	Intermodal position
	-5	EJECT2	EJECT2 position
	-6	EJECT2-ULSTOP	Intermodal position
	-7	ULSTOP	ULSTOP position
	-8	ULSTOP-UPPER	Intermodal position
	-9	UPPER	Loading (unloading) tape
	-A	UPPER-ONSTOP	Intermodal position
	-B	ONSTOP	PLAY position
	-C	PLAY-FWD/SS	Intermodal position
	-D	FWD/SS	FWD (FWD Still/Slow) position
	-E	FWD/SS-REV	Intermodal position
	-F	REV	REV (REV Still/Slow) position
Odd number (1, 3, 5, 7, 9, B, D, F)	-0	REV-OFFSTOP	Intermodal position
	-1	OFFSTOP	Pinch roller OFF position
	-2	OFFSTOP-FFREWB	Intermodal position
	-3	FFREWB	FF/REW Brake position
	-4	FFREWB-FFREW	Intermodal position
	-5	FFREW	FF/REW position

1.3.6 EMG detail information <2>

The type of the cassette tape and the cassette tape winding position can be confirmed based on the figure in EMG detail information <2> .

[FDP/OSD display]

*5 :*6 :*7

*5 : Type of the cassette tape in use <1>
*6 : Winding position of the cassette tape in use
*7 : Type of the cassette tape in use <2> (Winding area)

Note:

- ***EMG detail information <2> is the reference information stored using the remaining tape detection function of the cassette tape. As a result, it may not identify cassette correctly when a special cassette tape is used or when the tape has variable thickness.***

***5 : Cassette tape type <1>**

Display	Cassette tape type <1>
00	Cassette type not identified
16	Large reel/small reel (T-0 to T-15/T-130 to T-210) not classified
82	Small reel, thick tape (T-120) identified/thin tape (T-140) identified
84	Large reel (T-0 to T-60) identified
92	Small reel, thick tape (T-130) identified/thin tape (T-160 to T-210) identified
93	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) not classified
C3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
D3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
E1	C cassette, thick tape (TC-10 to TC-20) identified
E2	Small reel, thick tape (T-0 to T-100) identified
E9	C cassette, thin tape (TC-30 to TC-40) identified
F1	C cassette, thick tape/thin tape (TC-10 to TC-40) not classified

Notes:

- ***Cassette tape type <1> is identified a few times during mode transition and the identification count is variable depending on the cassette tape type. If an EMG occurs in the middle of identification, the cassette tape type may not be able to be identified.***
- ***If other value than those listed in the above table is displayed, the cassette tape type is not identified.***

***6 : Cassette tape winding position**

The cassette tape winding position at the moment of EMG is displayed by dividing the entire tape (from the beginning to the end) in 21 sections using a hex number from “00” to “14”.

“00” : End of winding
“14” : Beginning of winding
“FF” : Tape position not identified

***7 : Cassette tape type <2> (Winding area)**

Display	Cassette tape type <2>		(Reference) Word data (Beginning) (End)
00	Cassette type not identified		
04 - 08	C cassette, thick tape	TC-10	(0497 - 0506) (0732 - 0858)
05 - 06	Small reel, thick tape	T-20	(05A9 - 0661)
05 - 0C	C cassette, thick tape	TC-20P	(0599 - 05FF) (0AA1 - 0C07)
06 - 0C	C cassette, thin tape	TC-40	(0623 - 063D) (0C41 - 0CC3)
06 - 0C	C cassette, thin tape	TC-30	(0611 - 0638) (0C0C - 0CB2)
07 - 08	Small reel, thick tape	T-40	(07CC - 08E5)
09 - 0B	Small reel, thick tape	T-60	(09FD - 0B78)
0C - 0D	Small reel, thick tape	T-80(DF-160)	(0C20 - 0DFC)
0D - 0F	Small reel, thick tape	T-90(DF-180)	(0D31 - 0F3E)
0E - 10	Small reel, thick tape	T-100	(0E43 - 107F)
10 - 12	Small reel, thin tape	T-140	(10E1 - 120C)
10 - 13	Small reel, thick tape	T-120(DF-240)	(1073 - 1313)
11 - 14	Small reel, thick tape	T-130	(1185 - 1429)
12 - 14	Small reel, thin tape	T-160	(12D3 - 141F)
13 - 14	Small reel, thin tape	T-210(DF-420)	(1373 - 14C3)
13 - 14	Small reel, thin tape	T-180(DF-360)	(1357 - 14C0)
13 - 14	Small reel, thin tape	T-168	(1395 - 14EE)
13 - 14	Small reel, thick tape	DF-300	(13A8 - 14CE)
15 - 16	Large reel	T-20	(1536 - 1618)
16 - 17	Large reel	T-30	(1647 - 175A)
17 - 18	Large reel	T-40	(1759 - 189C)
19 - 1B	Large reel	T-60	(1989 - 1B2F)

Note:

- ***The values of cassette tape type <2> in the above table are typical values with representative cassette tapes.***

1.3.7 EMG detail information <3>

Three deck operation modes preceding the deck operation mode in which the EMG occurs may be confirmed based on the figures in the EMG information detail <3>. For the contents of the displayed information, see the table "Deck operation mode" in section "1.3.5 EMG detail information <1>".

1.4 Service position

This unit has been designed so that the Mechanism and Main board assemblies can be removed together from the chassis assembly. Before diagnosing or servicing the circuit boards, take out the major parts from the chassis assembly.

1.4.1 How to set the “Service position”

(1) Refer to the disassembly procedure and perform the disassembly of the major parts before removing the Mechanism assembly.
(2) Remove the screws that fix the Mechanism assembly to the Chassis assembly. If any other screws are used to fix the boards, remove them also.
(3) Remove the combined Mechanism and Main board assemblies.
(4) If any other major parts are used, remove them also.
(5) Connect the wires and connectors of the major parts that have been removed in steps (1) to (4). (Refer to Fig. 1-2-2d.)
(6) Place the combined Mechanism, Main board and other board assemblies upside down.
(7) Insert the power cord plug into the power outlet and then proceed with the diagnostics and servicing of the board assembly.

Notes:

- ***Before inserting the power cord plug into the power outlet, make sure that none of the electrical parts are able to short-circuit between the workbench and the board assembly.***
- ***For the disassembly procedure of the major parts and details of the precautions to be taken, see “1.2 Removing the major parts”.***
- ***If there are wire connections from the Main board and Mechanism assemblies to the other major parts, be sure to remove them (including wires connected to the major parts) first before performing step (2).***
- ***When carrying out diagnosis and repair of the Main board assembly in the “Service position”, be sure to ground both the Main board and Mechanism assemblies. If they are improperly grounded, there may be noise on the playback picture or FDP counter display may move even when the mechanism is kept in an inoperative status.***
- ***In order to diagnose the playback or recording of the cassette tape, set the Mechanism assembly to the required mode before placing it upside down. If the mechanism mode is changed (including ejection) while it is in an upside down position the tape inside may be damaged.***
- ***For some models, the mechanism and board assemblies are attached by connectors only. When carrying out a diagnosis or repair of the boards in the “Service position”, make sure that the connectors are not disconnected.***

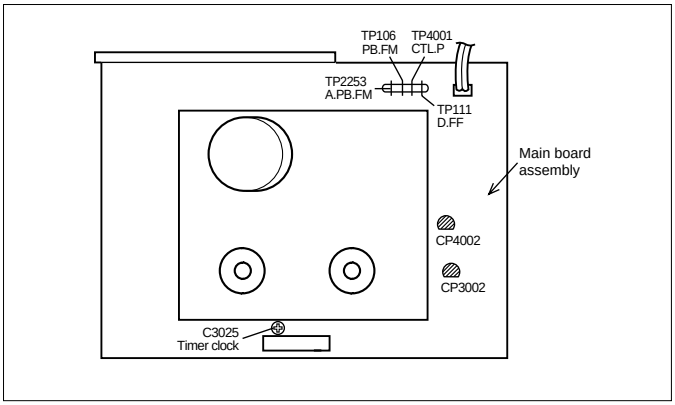


Fig. 1-4-1a

1.5 Jig RCU mode

This unit uses the following two modes for receiving remote control codes.

1) User RCU mode : Ordinary mode for use by the user.
2) Jig RCU mode : Mode for use in production and servicing.

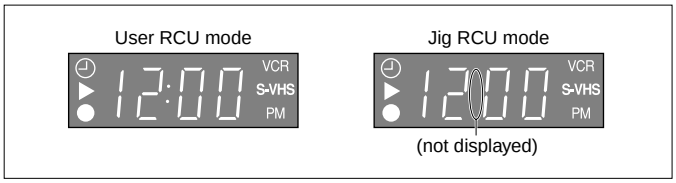


Fig. 1-5-1a

When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). As both of the above two modes are stored in the EEPROM, it is required to set the VCR back to the User RCU mode each time that an adjustment is made or to check that the necessary operations have been completed. These modes can be set by the operations described below.

Note:

- ***Confirm the RCU mode when exchanged parts. Since some SERVICE PARTS sets the VCR to the Jig RCU mode as initial setting.***

1.5.1 Setting the Jig RCU mode

(1) Unplug the power cord plug from the power outlet.
(2) Press and hold the “REC” and “PAUSE” buttons on the VCR simultaneously, while plugging the power cord plug into the power outlet.
When the VCR is set to the Jig RCU mode, the symbols (“ : ”) in the time display of the FDP are turned off.

1.5.2 Setting the User RCU mode

(1) Turn off the power.
(2) Press the “REC” and “PAUSE” buttons of the VCR simultaneously. Alternatively, transmit the code “80” from the Jig RCU.

1.6 Mechanism service mode

This model has a unique function to enter the mechanism into every operation mode without loading of any cassette tape. This function is called the “Mechanism service mode”.

1.6.1 How to set the “Mechanism service mode”

(1) Set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received).
(2) Transmit the code “E5” from the Jig RCU.
(3) Release the lug of the Cassette holder and then slide the Cassette holder toward the direction where the Cassette holder is loaded by manually.
(4) The cassette holder lowers and, when the loading has completed, the mechanism enters the desired mode.
When the VCR is set to the Mechanism service mode, the symbols (“Timer”) in the FDP (LED) are blinked.

1.6.2 How to exit from the "Mechanism service mode"

(1) Unplug the power cord plug from the power outlet.

1.7 Maintenance and inspection

1.7.1 Cleaning

Regular cleaning of the transport system parts is desirable but practically impossible. So make it a rule to carry out cleaning of the tape transport system whenever the machine is serviced.
When the video head, tape guide and/or brush get soiled, the playback picture may appear inferior or at worst disappear, resulting in possible tape damage.

Note:

- ***Absolutely avoid sweeping the upper drum vertically as this will cause damage to the video head.***

(1) When cleaning the upper drum (especially the video head), soak a piece of closely woven cloth with alcohol and while holding the cloth onto the upper drum by the fingers, turn the upper drum counterclockwise.
(2) To clean the parts of the tape transport system other than the upper drum, use a piece of closely woven cloth or a cotton swab soaked with alcohol.
(3) After cleaning, make sure that the cleaned parts are completely dry before using the cassette tape.

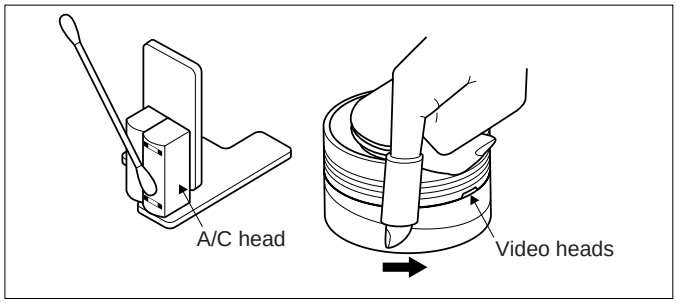


Fig. 1-7-1a

1.7.2 Lubrication

With no need for periodical lubrication, you have only to lubricate new parts after replacement. If any oil or grease on contact parts is soiled, wipe it off and newly lubricate the parts.

Note:

- ***See the "mechanism assembly" diagram of the "parts list" for the lubricating or greasing spots, and for the types of oil or grease to be used.***

1.7.3 Suggested servicing schedule for main components

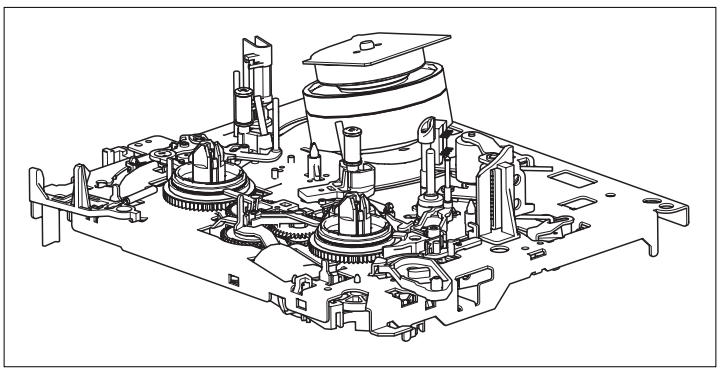
The following table indicates the suggested period for such service measures as cleaning, lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions. However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time, even if the set is not used.

System	Parts name	Operation hours	
		1000H	2000H
Tape transport	Drum assembly	C,X	X
	A/C head	C,X	C,X
	Pinch roller arm assembly	C	C
	Full erase head	C	C
	Tension arm assembly	C	C
	Capstan motor (Shaft)	C	C
	Guide arm assembly	C	C
Drive	Capstan motor		X
	Capstan brake assembly		X
	Main brake assembly		X
	Belt (Capstan)	X	X
	Loading motor		X
	Clutch unit		X
	Worm gear		X
	Control plate		X
Other	Rotary encoder		X

C : Cleaning
X : Inspection or Replacement if necessary

SECTION 2
MECHANISM

For disassembling and assembling of MECHANISM ASSEMBLY, refer to the SERVICE MANUAL No.86700(MECHANISM ASSEMBLY).



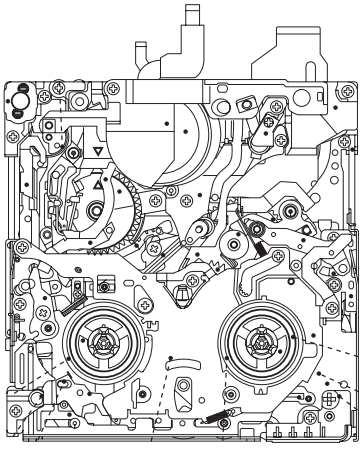
MECHANISM ASSEMBLY

JVC

SERVICE MANUAL

MECHANISM ASSEMBLY

DVC MECHANISM
VHS-C MECHANISM
VHS MECHANISM



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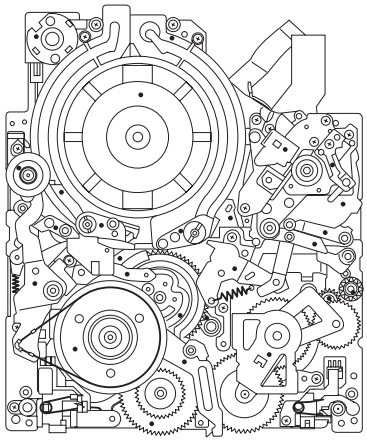
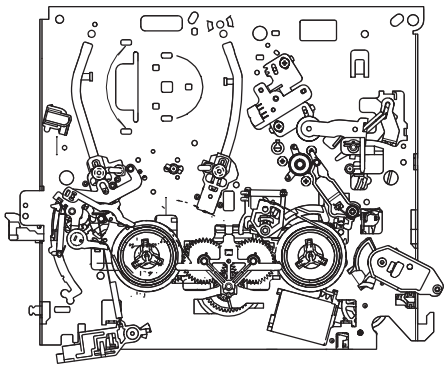


<VHS-C MECHANISM>



<VHS MECHANISM>

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3 PARTS LIST 3-1

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No.86700
2003/04

SECTION 1
JIGS AND TOOLS

1.1 TOOLS REQUIRED FOR ADJUSTMENTS

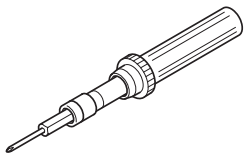
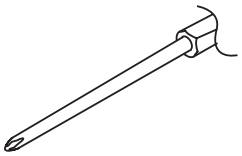
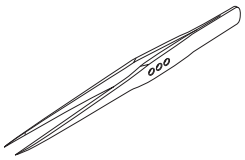
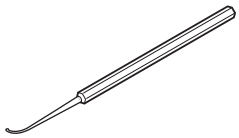
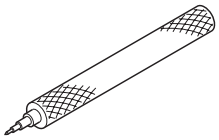
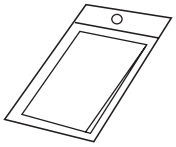
1. Torque driver YTU94088	2. Bit YTU94088-003
	
3. Tweezers P-895	4. Chip IC replacement jig PTS40844-2
	
5. Slit washer installation jig YTU94121A	6. Cleaning cloth KSMM-01
	

Fig.1-1-1

1. Torque driver
Be sure to use to fastening the mechanism and exterior parts because those parts must strictly be controlled for tightening torque.
Torque setting value of torque driver is limited. At the values over the maximum torque setting value, fasten a screw manually not to damage the screw thread.

2. Bit
This bit is slightly longer than those set in conventional torque drivers.

3. Tweezers
To be used for removing and installing parts and wires.

4. Chip IC replacement jig
To be used for replacement of part.

5. Slit washer installation jig
To be used to install slit washers.

6. Cleaning cloth
Recommended cleaning cloth to wipe down the video heads, mechanism (tape transport system), optical lens surface.

SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

2.1 DVC MECHANISM

2.1.1 Precautions

(1) When fastening parts, pay careful attention to the tightening torque of each screw. Unless otherwise specified, tighten a screw with the torque of 0.055 N•m (0.56 kgf•cm).
(2) Be sure to disconnect the set from the power supply before fastening and soldering parts.
(3) When disconnecting/connecting wires, be careful not to get them and their connectors damaged.
(4) When replacing parts, be very careful neither to damage other parts nor to fit wrong parts by mistake.

2.1.2 Notes on procedure for disassembly/assembly

The disassembling procedure table (Fig. 2-1-10 on page 2-4,a part of the table is shown below for reference)shows the procedure to disassemble/reassemble mechanism parts.
Carefully read the following explanation before starting actual disassembling/reassembling work. The item numbers(circled numbers)in the following explanation correspond to those appearing under respective columns of the table.

Example

NO.	PART NAME		FIG.	POINT	NOTE	REMARKS
[1]	CASSETTE HOUSING ASSY	T	Fig.2-4-3	3(S1),(L1a)-(L1e)	**NOTE 1 a,b,c,d**	ADJUSTMENT
[2]	UPPER BASE ASSY	T	Fig.2-4-4	(S2),(L2a),(L2b)	**NOTE 2**	
[3]	DRUM ASSY	T		(S3a),2(S3b)	**NOTE 3 a,b**	
[4]	REEL DISK ASSY(SUP)	T	Fig.2-4-5	(W4)	**NOTE 4 a**	
[5]	REEL DISK ASSY(TU)	T		(W5a),(W5b),(W5c)	**NOTE 5 a,b**	
[6]	REEL COVER ASSY	T		(W6),(S6a),2(S6b)	**NOTE 6**	ADJUSTMENT

*1 *2 *3 *4 *5 *6 *7

*1 Numbers appearing in this column indicate the order to remove parts. When reassembling, follow these numbers in the reverse order. Circled numbers in this column correspond to those appearing in drawings of this section.
*2 This column shows part names corresponding to numbers in the left column.
*3 The symbol (T or B)appearing in this column shows the side which the objective part is mounted on.
T =the upper side, B =the lower side
*4 Symbols appearing in this column indicate drawing numbers.
*5 This column indicates parts and points such as screws, washers,springs,and others to be removed/fitted for disassembling/reassembling the mechanism. Besides such the parts, this column occasionally indicates working points.

P = Spring
W = Washer
S = Screw
* = Lock (L),soldering (SD),shield,connector (CN),etc.

Example

- Remove (W1)=Washer W1.
- Remove the solder at (SD1)=Point SD1.
- Disconnect A = Connector A.

*6 Numbers in this column represent the numbers of notes in the text.
(For parts that need phase adjustment after reassembling, refer to “MECHANISM ADJUSTMENTS”.)
*7 This column indicates required after-disassembling/-reassembling work such as phase adjustment or mechanism adjustment.

2.1.3 DISASSEMBLY AND ASSEMBLY OF MECHANISM ASSEMBLY

2.1.3.1 General statement

The mechanism should generally be disassembled/assembled in the C.IN mode (ASSEMBLY mode). (Refer to Fig. 2-1-1,2-1-2.) However, when the mechanism is removed from the main body, it is set in the STOP mode. Therefore, after the mechanism is removed from the main body, supply 3 V DC to the electrode on the top of the loading motor to enter the mechanism mode into the C IN mode compulsory.

<Mechanism assembly/Cassette housing assembly>

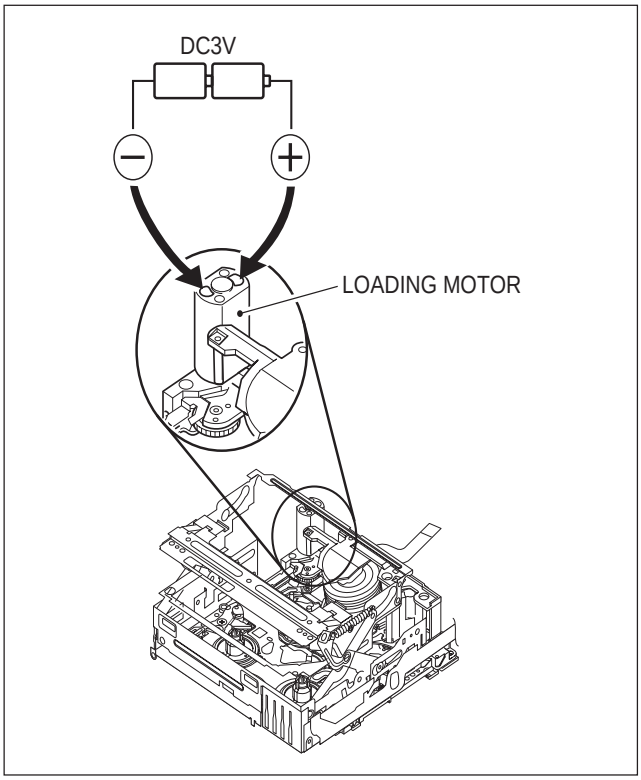


Fig.2-1-1

<Back side of the mechanism assembly>

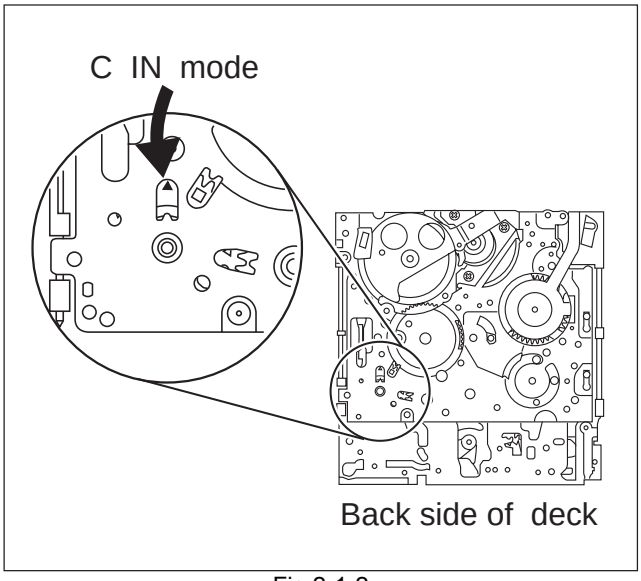


Fig.2-1-2

2.1.3.2 Explanation of mechanism mode

The mechanism mode of this model is classified into five modes as shown in Fig. 2-1-9. Each mechanism mode can be distinguished from others by the relative position of "△", "○", "⬭", "□" marks on the sub cam gear to the inner or outer protrusion on the main deck.

Refer to Fig. 2-1-3 to 2-1-8 below.

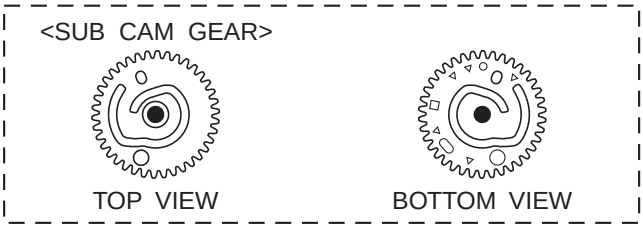


Fig.2-1-3

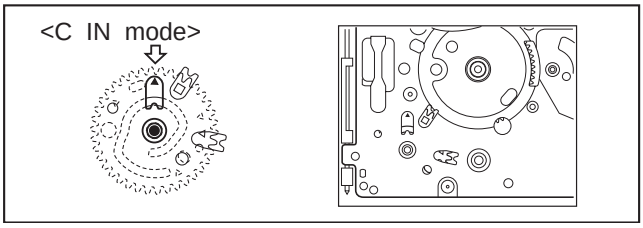


Fig.2-1-4

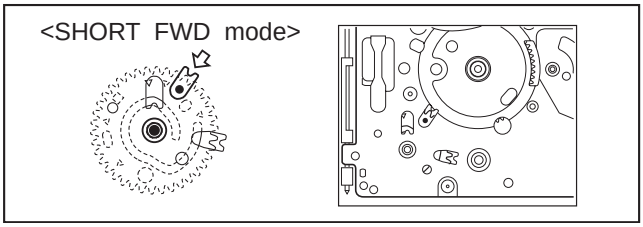


Fig.2-1-5

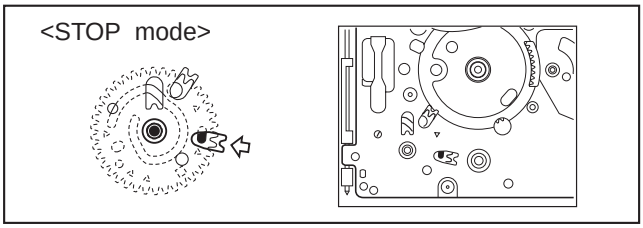


Fig.2-1-6

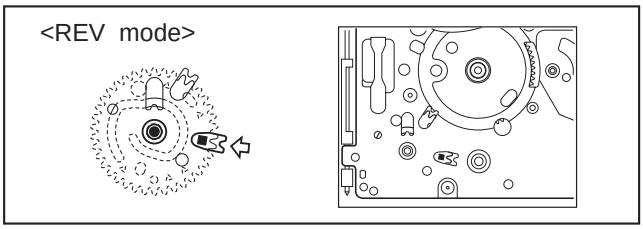


Fig.2-1-7

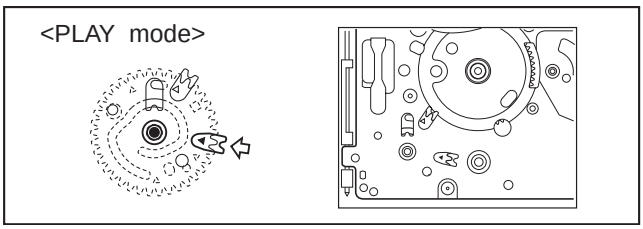


Fig.2-1-8

2.1.3.3 Mechanism timing chart

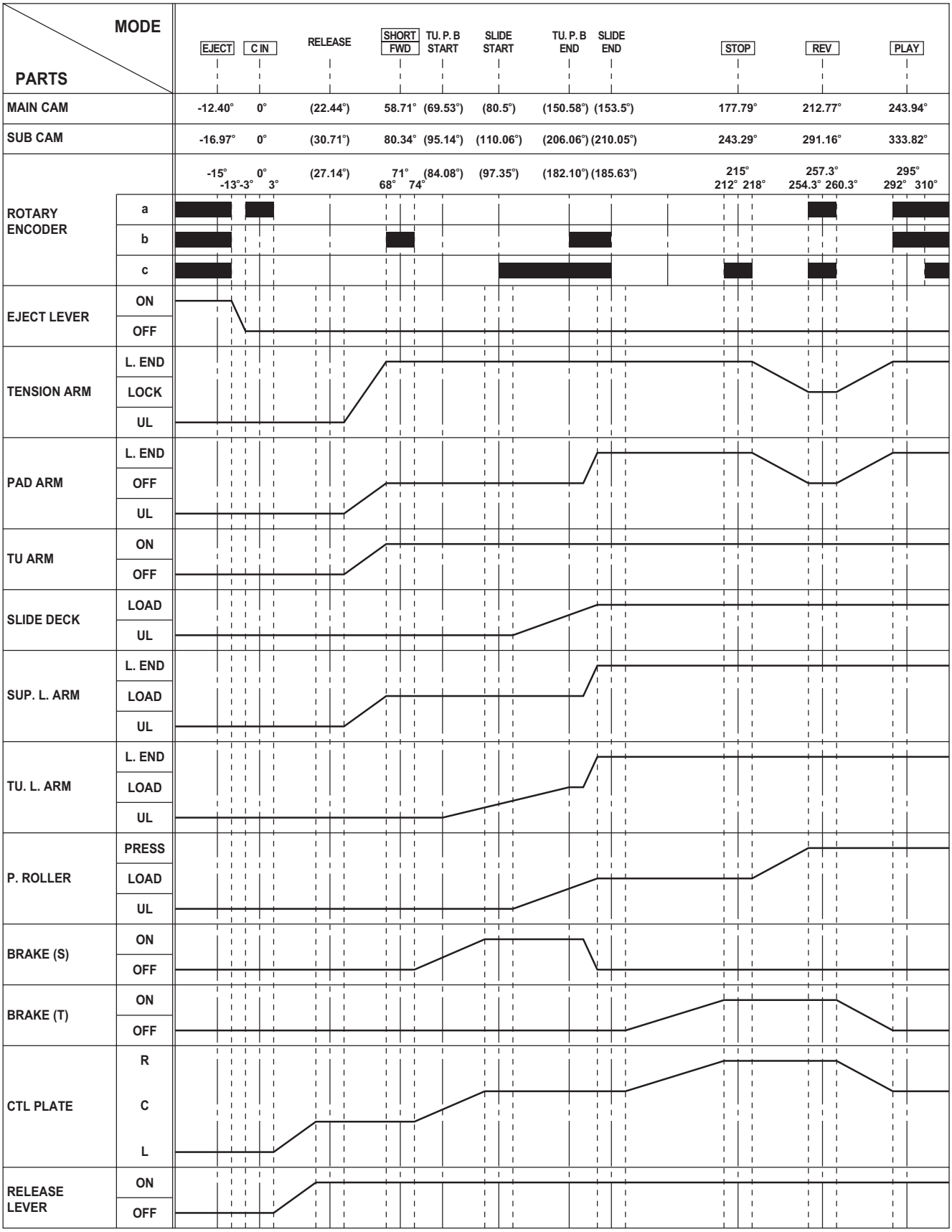


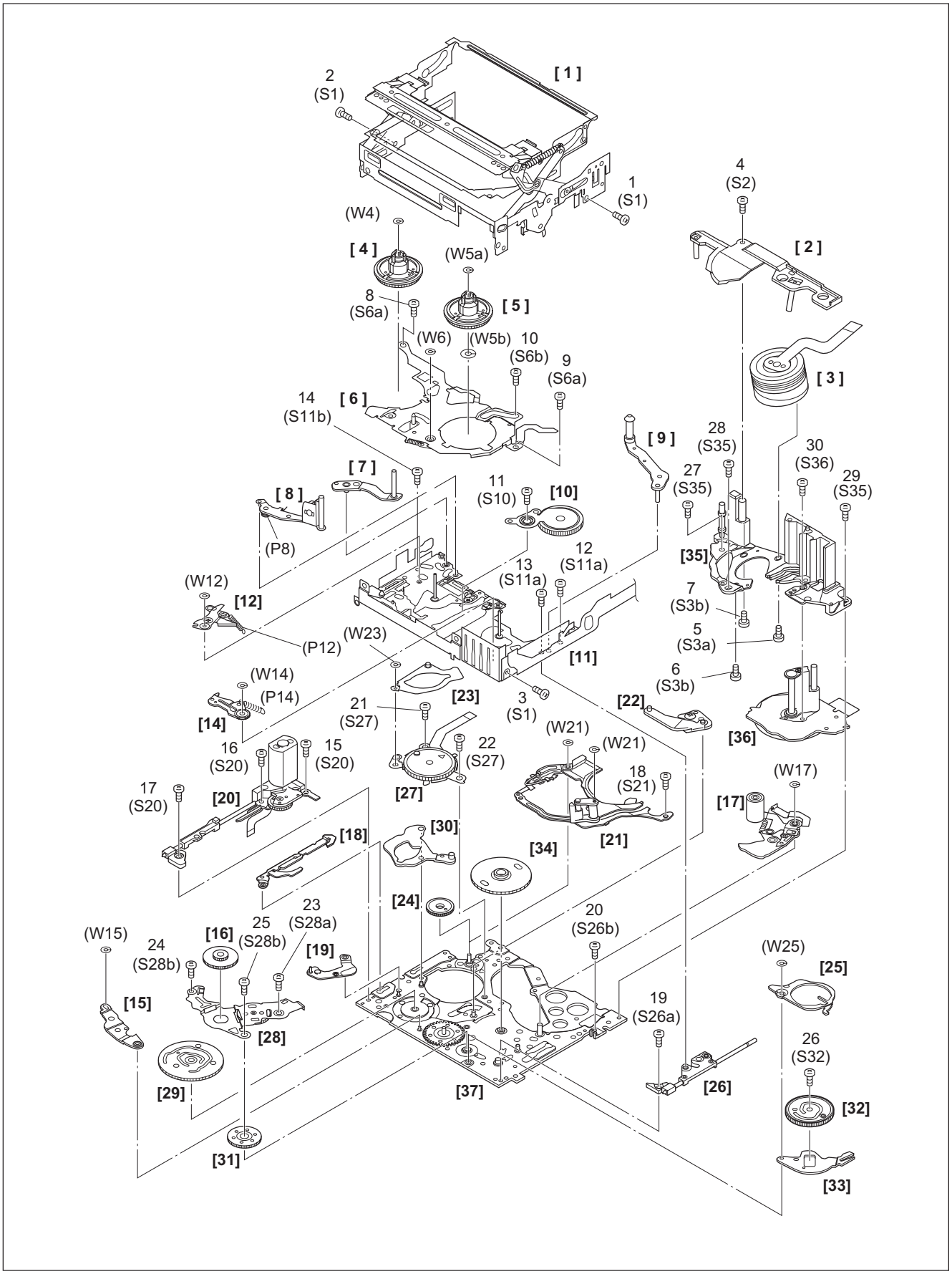
Fig.2-1-9

2.1.4 DISASSEMBLY PROCEDURE TABLE

MARK: # After assembly, perform adjustments.

NO.	PART NAME		FIG.	POINT	NOTE	REMARKS
[1]	CASSETTE HOUSING ASSY	T	Fig.2-1-14	3(S1),(L1a)-(L1e)	**NOTE 1 a,b,c,d**	ADJUSTMENT
[2]	UPPER BASE ASSY	T	Fig.2-1-15	(S2),(L2a),(L2b)	**NOTE 2**	
[3]	DRUM ASSY	T		(S3a),2(S3b)	**NOTE 3 a,b**	ADJUSTMENT
[4]	REEL DISK ASSY(SUP)	T	Fig.2-1-16	(W4)	**NOTE 4**	
[5]	REEL DISK ASSY(TU)	T		(W5a),(W5b)	**NOTE 5 a,b**	
[6]	REEL COVER ASSY	T		(W6),2(S6a),(S6b)	**NOTE 6**	
[7]	TENSION ARM ASSY	T	Fig.2-1-17	(L7)	**NOTE 7**	ADJUSTMENT / #
[8]	SLANT POLE ARM ASSY	T		(P8)	**NOTE 8**	ADJUSTMENT
[9]	TU ARM ASSY	T		(L9)	**NOTE 9**	ADJUSTMENT
[10]	SWING ARM ASSY	T		(S10)	**NOTE 10**	ADJUSTMENT
[11]	SLIDE DECK ASSY	T	Fig.2-1-18	2(S11a),(S11b),2(L11a), 2(L11b),(L11c)	**NOTE 11a,b**	ADJUSTMENT / #
[12]	PAD ARM ASSY	T	Fig.2-1-19	(P12),(L12),(W12)	**NOTE 12**	ADJUSTMENT / #
[13]	-	-		-	-	
[14]	TU BRAKE ASSY	T		(P14),(L14),(W14)	**NOTE 14**	ADJUSTMENT
[15]	TENSION CTL LEVER ASSY	T	Fig.2-1-20	(W15)	**NOTE 15**	ADJUSTMENT
[16]	CENTER GEAR	T		-	**NOTE 16**	
[17]	PINCH ROLLER ARM F. ASSY	T		(W17)	**NOTE 17**	ADJUSTMENT
[18]	TENSION CTL PLATE ASSY	T		-	**NOTE 18**	ADJUSTMENT
[19]	BRAKE CTL LEVER ASSY	T		-	**NOTE 19**	ADJUSTMENT
[20]	MOTOR BRACKET ASSY	T	Fig.2-1-21	3(S20),(L20a),2(L20b)	**NOTE 20**	ADJUSTMENT
[21]	GUIDE RAIL ASSY	T		2(W21),(S21),2(L21a),(L21b)	**NOTE 21**	ADJUSTMENT
[22]	SLIDE LEVER 2 ASSY	T		-	**NOTE 22**	ADJUSTMENT / #
[23]	LOADING PLATE ASSY	T		(W23)	**NOTE 23**	ADJUSTMENT
[24]	MODE GEAR	T		-	**NOTE 24**	
[25]	EJECT LEVER	T		(W25)	**NOTE 25**	ADJUSTMENT
[26]	BASE R ASSY	T	Fig.2-1-22	(S26a),(S26b),2(L26)	**NOTE 26**	ADJUSTMENT
[27]	ROTARY ENCODER	T		2(S27)	**NOTE 27**	PHASE ADJUSTMENT
[28]	GEAR COVER ASSY	T		(S28a),2(S28b)	-	
[29]	MAIN CAM ASSY	T		-	**NOTE 29**	PHASE ADJUSTMENT
[30]	SLIDE ARM ASSY	T	Fig.2-1-23	-	**NOTE 30**	ADJUSTMENT
[31]	CONNECT GEAR 2	T		-	**NOTE 31**	
[32]	SUB CAM ASSY	T		(S32)	**NOTE 32**	PHASE ADJUSTMENT
[33]	CONTROL ARM ASSY	T		-	**NOTE 33**	ADJUSTMENT
[34]	REEL GEAR 1	T		-	**NOTE 34**	
[35] / [36]	DRUM BASE ASSY/ CAPSTAN MOTOR	T	Fig.2-1-24	3(S35)	**NOTE 35a,b**	ADJUSTMENT
[36]	CAPSTAN MOTOR	T		(S36)	**NOTE 36**	ADJUSTMENT
[37]	MAIN DECK ASSY	T		-	-	

Fig.2-1-10


2
(S1)
[1]
1
(S1)
4
(S2)
(W4)
[4]
(W5a)
[2]
8
(S6a)
[5]
(W6)
(W5b)
10
(S6b)
9
(S6a)
[3]
14
(S11b)
[6]
[9]
28
(S35)
30
(S36)
[7]
27
(S35)
29
(S35)
[8]
11
(S10)
[10]
(P8)
12
(S11a)
[35]
(W12)
13
(S11a)
7
(S3b)
[12]
5
(S3a)
(P12)
(W23)
[11]
6
(S3b)
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3
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[22]
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[24]
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(S26b)
(W15)
23
(S28a)
25
(S28b)
[16]
(W25)
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(S28b)
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19
(S26a)
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(S32)
[29]
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[26]
[32]
[31]
[33]

Fig.2-1-11

< TOP VIEW >

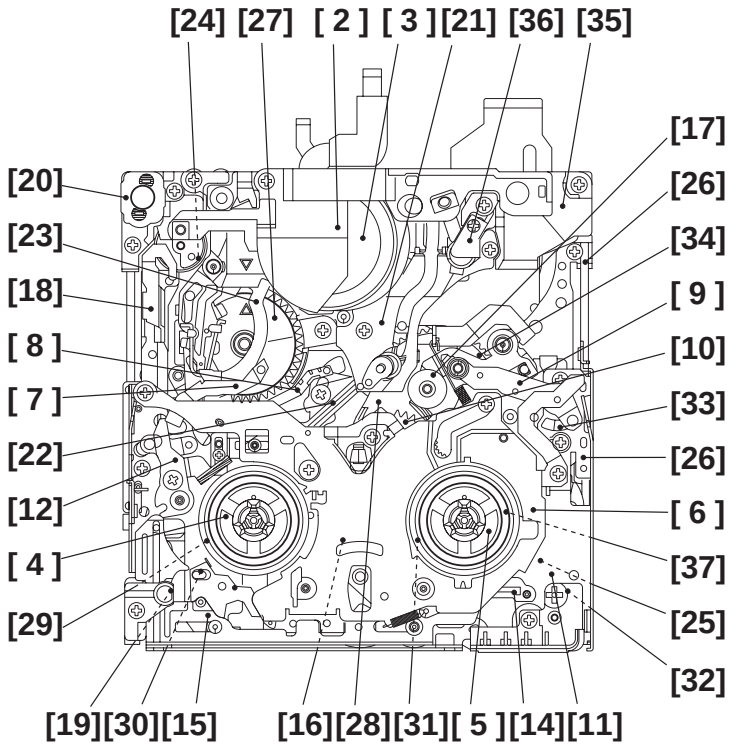

Fig.2-1-12

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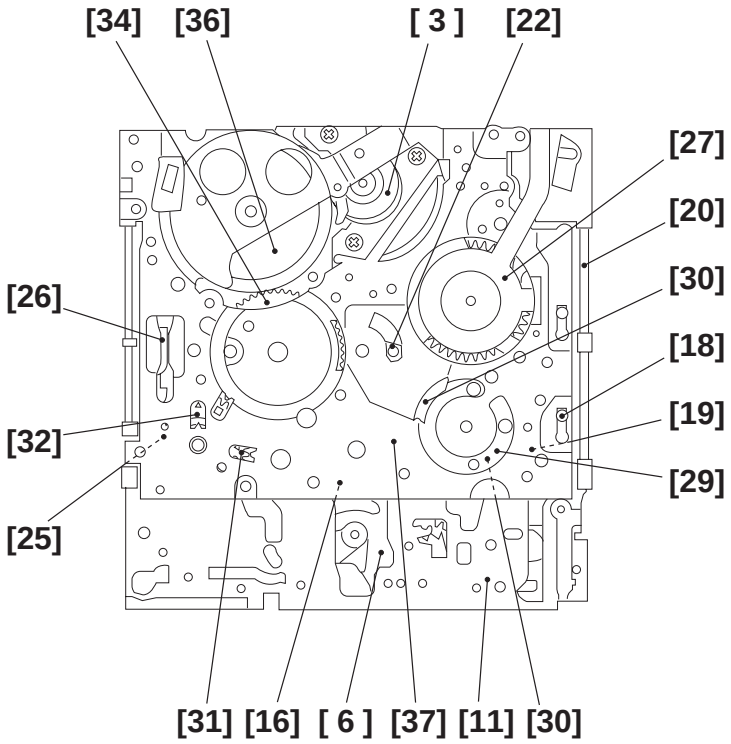


Fig.2-1-13

2.1.5 DISASSEMBLY/ASSEMBLY

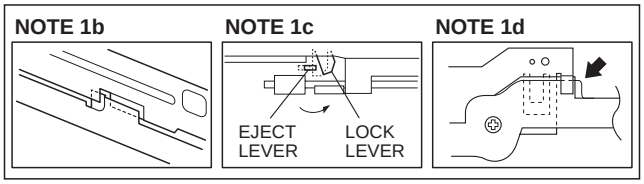
2.1.5.1 [1] CASSETTE HOUSING ASSY

NOTE 1a:
Be careful not to damage any of the parts during work.

NOTE 1b:
Special care is required in mounting.

NOTE 1c:
When mounting, the CASSETTE HOUSING ASSY should be attached in the Eject status. Pay heed to the positions of the LOCK LEVER and EJECT LEVER during mounting.

NOTE 1d:
When mounting, be sure to locate the FPC in the gap.



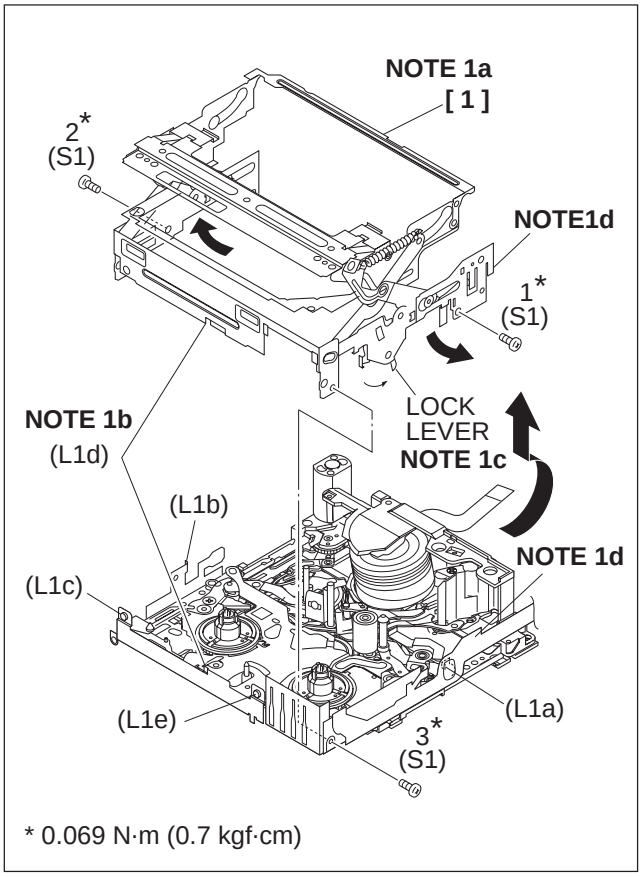


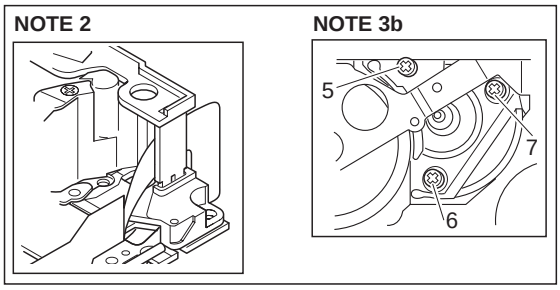
Fig.2-1-14

2.1.5.2 [2] UPPER BASE ASSY
[3] DRUM ASSY

NOTE 2:
When mounting, be sure to insert the FPC reinforcing sheet.

NOTE 3a:
Be mindful of scratches or damage during work.

NOTE 3b:
Be careful not to attach screws incorrectly.



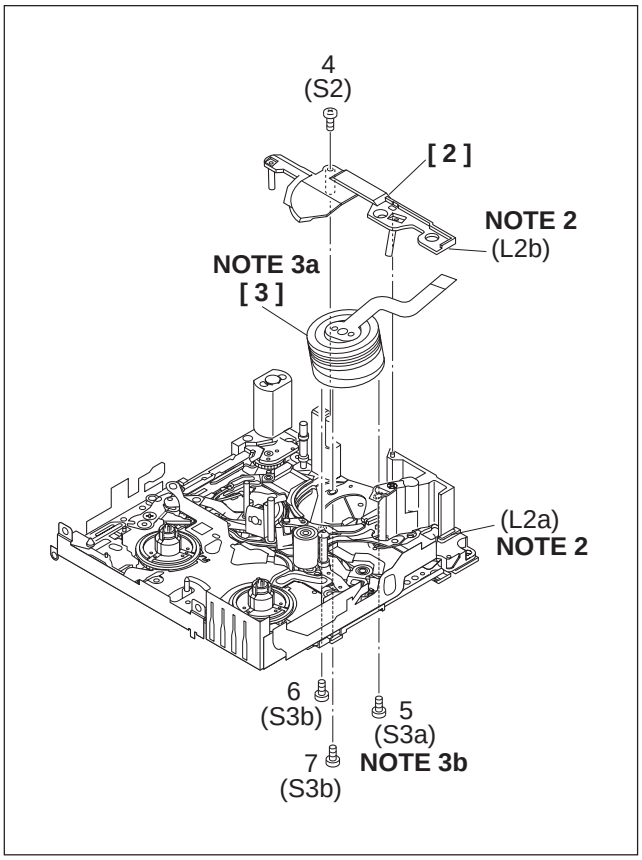


Fig.2-1-15

2.1.5.3 [4] REEL DISK ASSY(SUP)
[5] REEL DISK ASSY(TU)
[6] REEL COVER ASSY

NOTE 4:

Be careful not to attach the REEL DISK wrongly. The Supply side can be identified by the white color at the center.

NOTE 5a:

Be careful not to attach the REEL DISK wrongly. The Take-up side can be identified by the black color at the center.

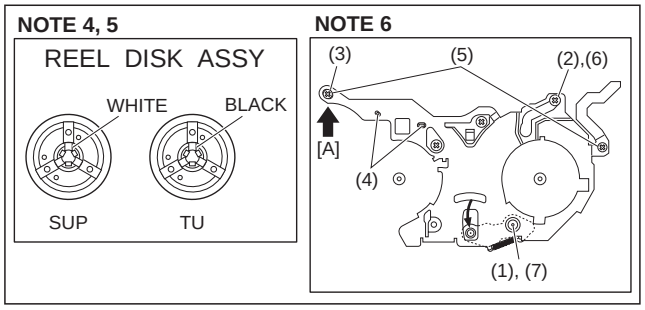
NOTE 5b

The washer is inserted under the REEL DISK.
Be carefull not to lose the washer.
Two washers are inserted under the REEL DISK in some products manufactured earlier, but one washer is inserted in the products manufactured recently and in the future.
See the parts list, and use the parts written in the parts list.

NOTE 6:

Perform the following steps for mounting.

(1) Align the hole with the pin.
(2) Attach the **[17]** PINCH ROLLER ARM FINAL ASSY by aligning the positions.
(3) Attach the SLIDE DECK ASSY (POINT[A]) by aligning the positions.
(4) Check that the parts below them are located in the correct positions.
(5) Tighten the 2 screws.
(6) Tighten the screw.
(7) Attach the 1 SLIT WASHER parts.



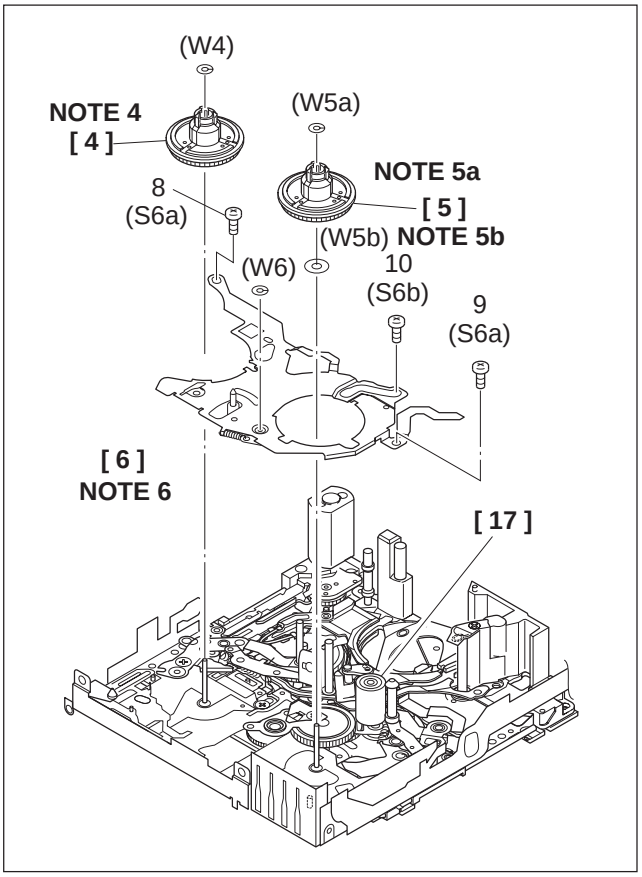


Fig.2-1-16

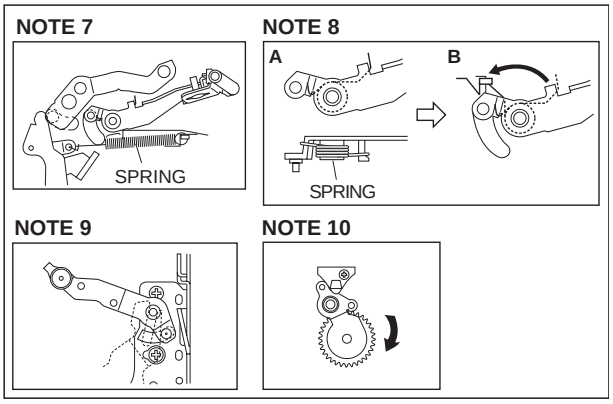
2.1.5.4 [7] TENSION ARM ASSY
[8] SLANT POLE ARM ASSY
[9] TU ARM ASSY
[10] SWING ARM ASSY

NOTE 7:
When detaching, remove the spring of the **[12]** PAD ARM ASSY in advance.
Pay attention to the attachment position.

NOTE 8:
When mounting the SLANT POLE ARM ASSY, hook the spring onto the lug as in diagram A, and fit the combination onto the SLIDE DECK ASSY. After fitting, hook the spring onto the lug of the SLIDE DECK ASSY as in diagram B.
Be careful not to lose the spring.

NOTE 9:
Pay attention to the attachment position.

NOTE 10:
When detaching, remove the screw then remove the SWING ARM ASSY by pulling it up and turning it.



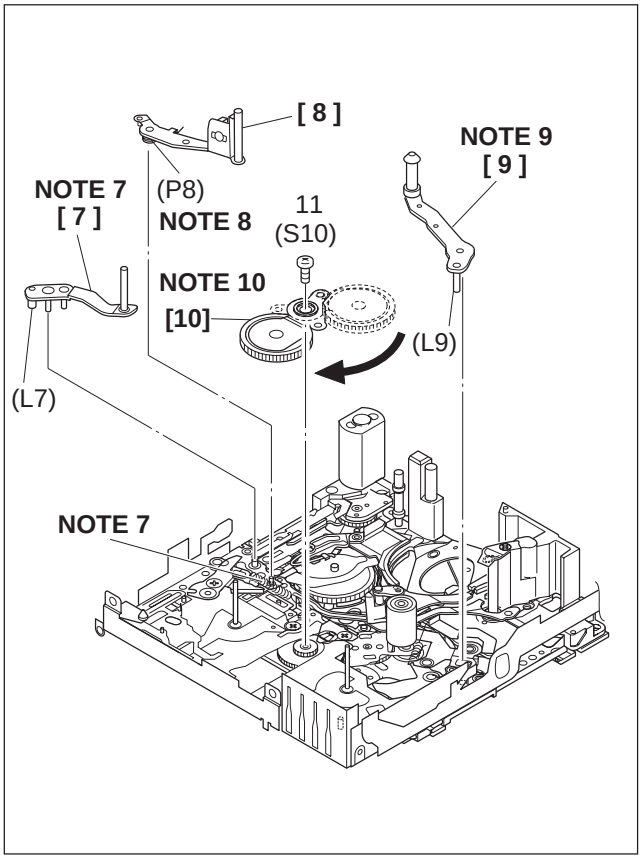


Fig.2-1-17

2.1.5.5 [11] SLIDE DECK ASSY

NOTE 11a:

Each of the parts on the SLIDE DECK ASSY can be replaced separately.

When detaching the assembly, if there is no need to replace any of its parts, remove the SLIDE DECK ASSY as it is.

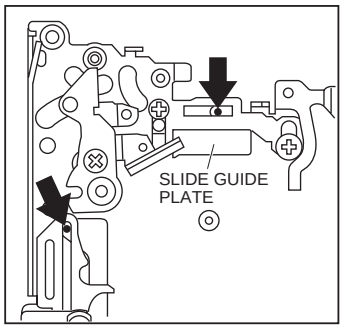
NOTE 11b:

When mounting, pay attention to the positions of the **[22]** SLIDE LEVER 2 ASSY studs and the **[19]** BRAKE CTL LEVER ASSY.

When mounting, position the CONTROL PLATE on the left side.

Pay attention to the position of the SLIDE GUIDE PLATE during mounting.

NOTE 11b



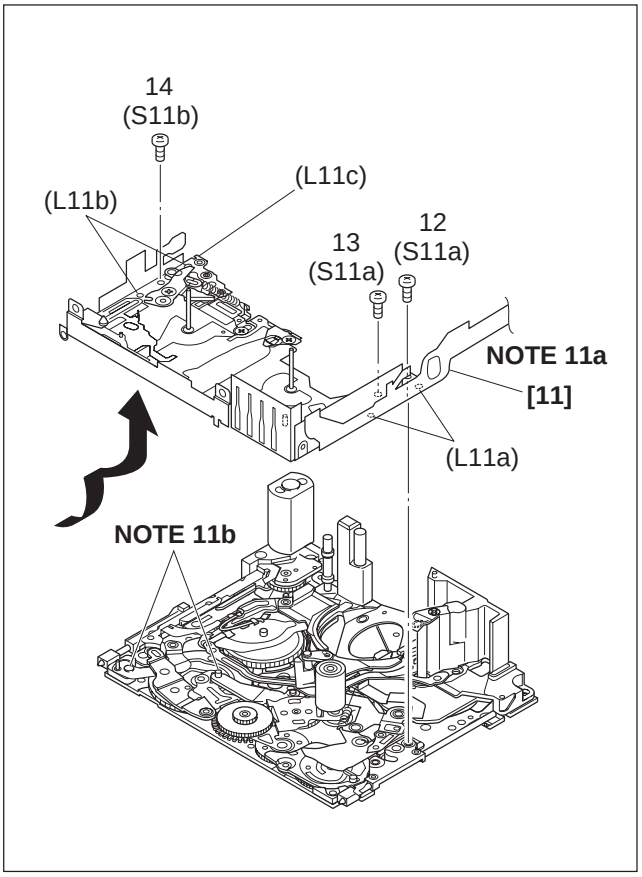


Fig.2-1-18

2.1.5.6 [12] PAD ARM ASSY
[13] -
[14] TU BRAKE ASSY

NOTE 12:

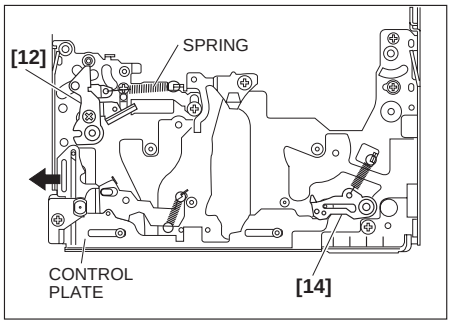
The spring may have already been disengaged when the **[8]** SLANT POLE ARM ASSY was removed.

NOTES 14:

When mounting, pay attention to the correct positioning.

Mount the CONTROL PLATE by moving it fully toward the left side.

NOTE 12,14



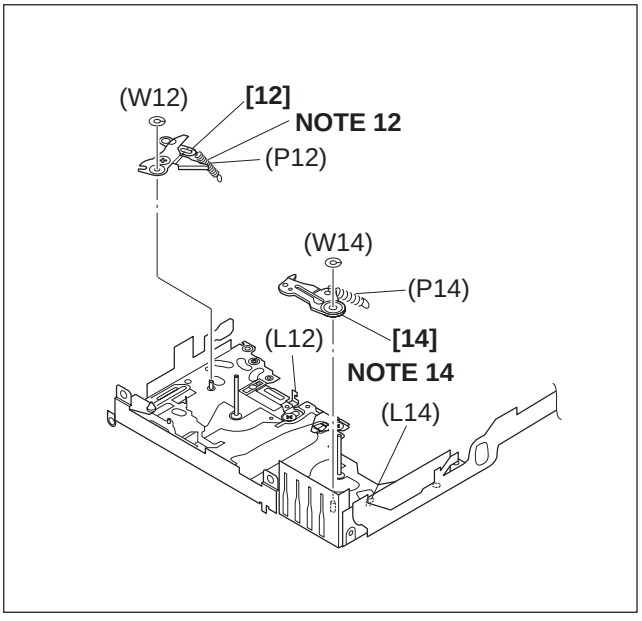


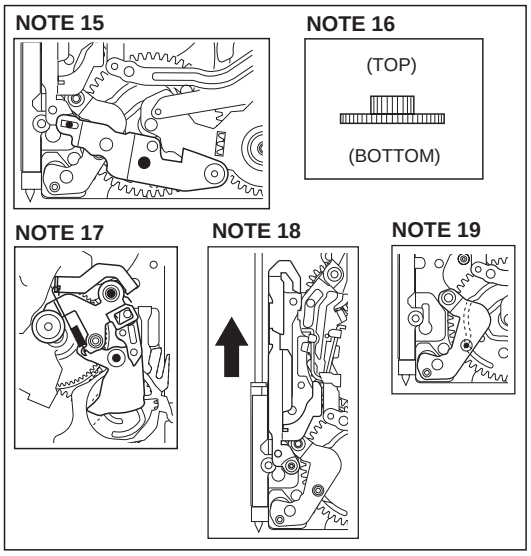
Fig.2-1-19

2.1.5.7 [15] TENSION CTL LEVER ASSY
[16] CENTER GEAR
[17] PINCH ROLLER ARM FINAL ASSY
[18] TENSION CTL PLATE ASSY
[19] BRAKE CTL LEVER ASSY

NOTES 15/16:
When mounting, pay attention to the correct positioning.

NOTE 17:
Take care against grease attachment during work.

NOTES 18/19:
When mounting, pay attention to the correct positioning.



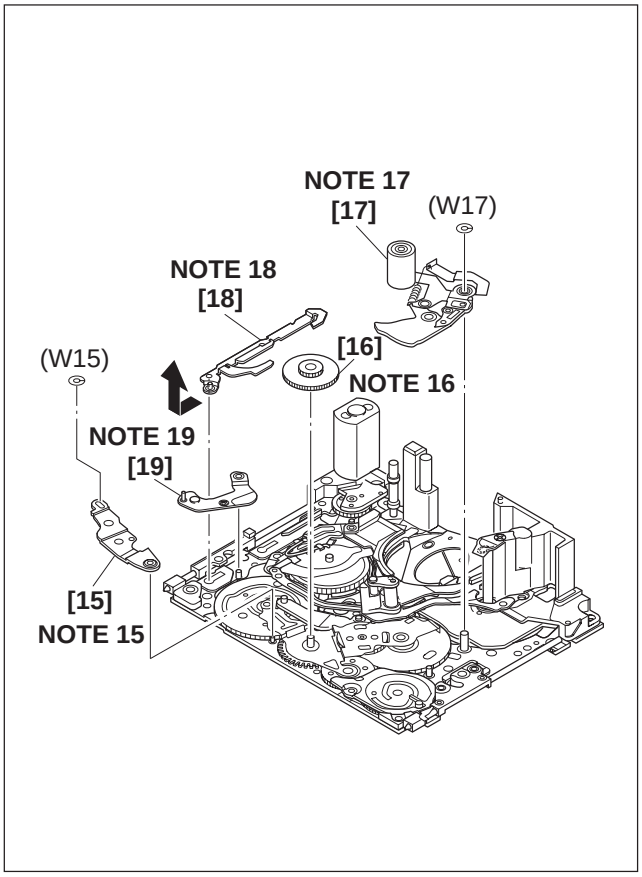


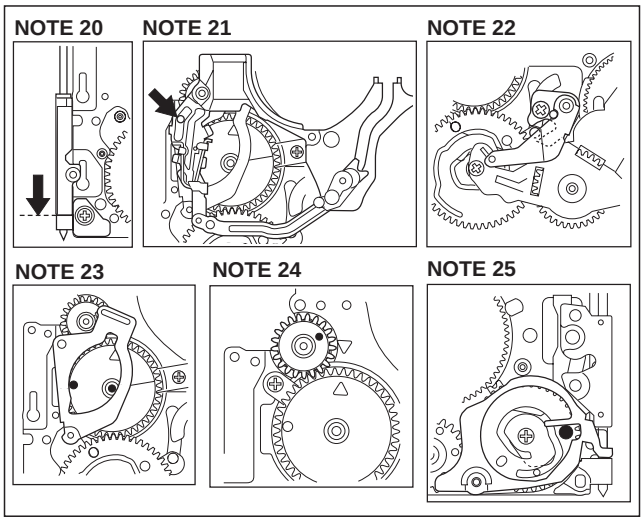
Fig.2-1-20

2.1.5.8 [20] MOTOR BRACKET ASSY
[21] GUIDE RAIL ASSY
[22] SLIDE LEVER 2 ASSY
[23] LOADING PLATE ASSY
[24] MODE GEAR
[25] EJECT LEVER

NOTE 20:
When mounting, pay attention to the positioning of the sliding parts.

NOTE 21:
When mounting, take care that no part is allowed to float or rattle.

NOTES 22/23/24/25:
When mounting, pay attention to the correct positioning.



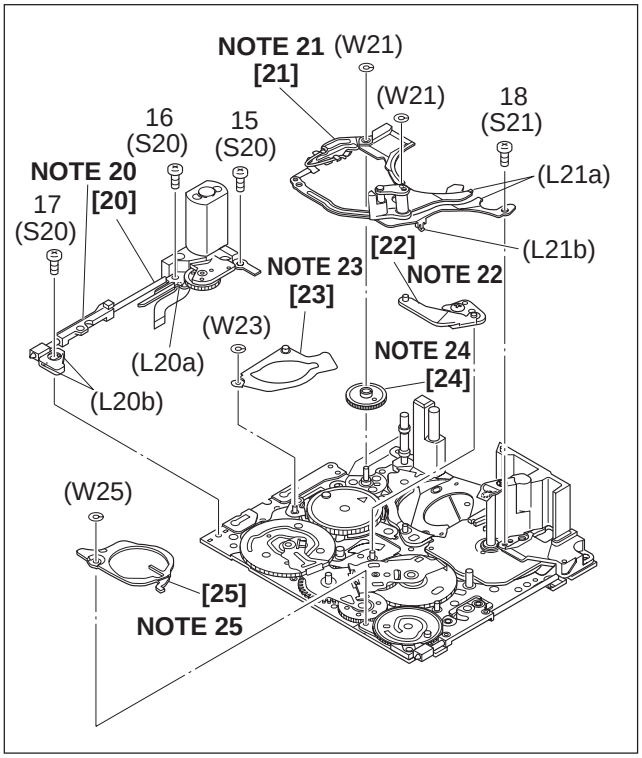


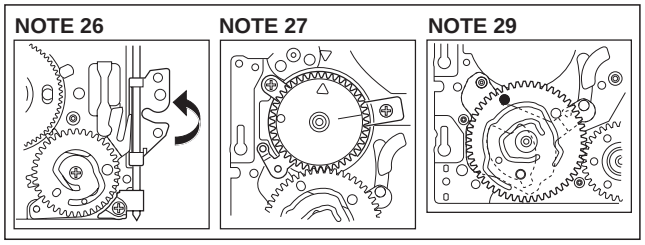
Fig.2-1-21

2.1.5.9 [26] BASE R ASSY
[27] ROTARY ENCODER
[28] GEAR COVER ASSY
[29] MAIN CAM ASSY

NOTE 26:
When mounting, fold the sliding part to the inner side.

NOTE 27:
When mounting, pay attention to the correct positioning and the FPC layout.

NOTE 29:
When mounting, pay attention to the correct positioning.



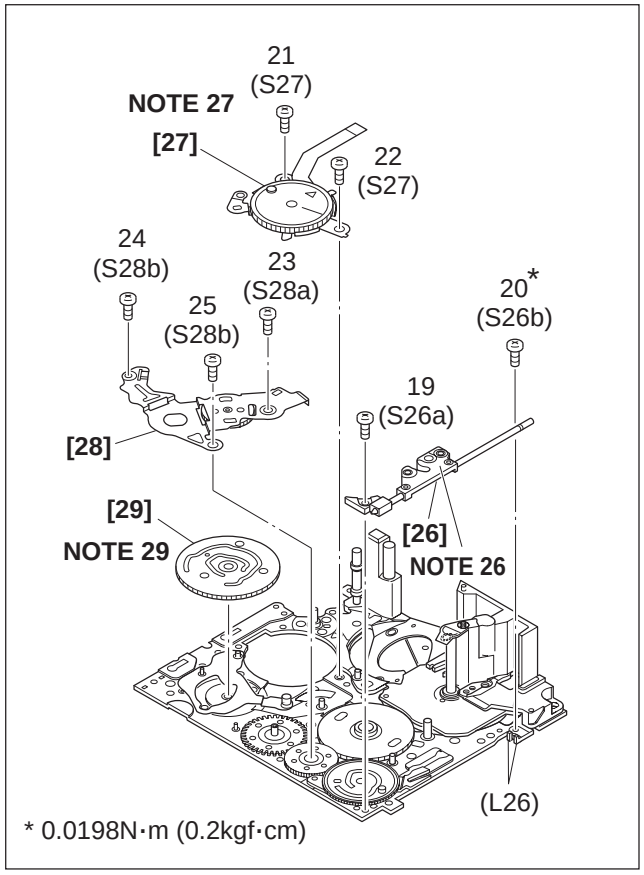


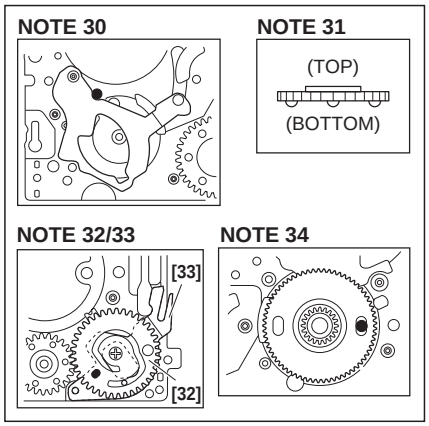
Fig.2-1-22

2.1.5.10 [30] SLIDE ARM ASSY
[31] CONNECT GEAR 2
[32] SUB CAM ASSY
[33] CONTROL ARM ASSY
[34] REEL GEAR 1

NOTE 30:
When mounting, pay attention to the correct positioning.

NOTE 31:
When mounting, pay attention to the position of the front and back.

NOTES 32/33/34:
When mounting, pay attention to the correct positioning.



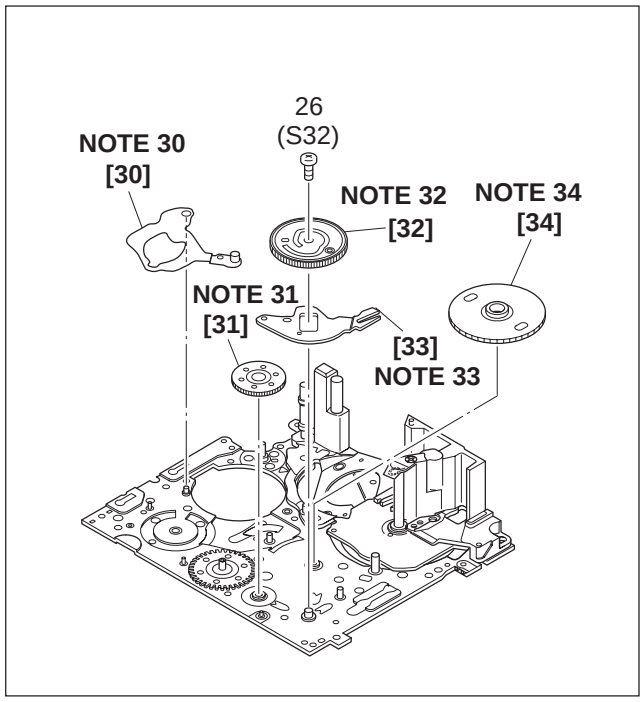


Fig.2-1-23

2.1.5.11 [35] DRUM BASE ASSY
[36] CAPSTAN MOTOR
[37] MAIN DECK ASSY

NOTES 35a/36:

Since [36]CAPSTAN MOTOR is attached to [35]DRUM BASE ASSY, remove [36]CAPSTAN MOTOR together with [35]DRUM BASE ASSY when removing [36]CAPSTAN MOTOR.

[36]CAPSTAN MOTOR should not be separated from [35]DRUM BASE ASSY except when replacing them.

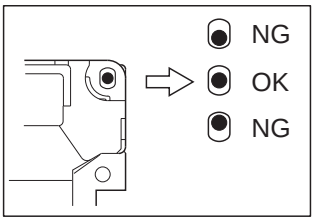
NOTE 35b:

It is very important to attach [35]DRUM BASE ASSY to the proper position.

Especially, improper engagement of [36]CAPSTAN MOTOR with [34]REEL GEAR 1 causes operational defection or abnormal sound. Therefore, confirm the attachment position before disassembly procedure.

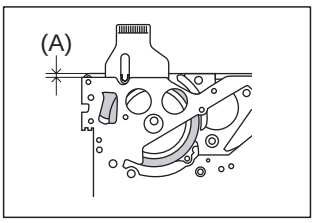
See the following figure as for the proper attachment position.

NOTE 35b



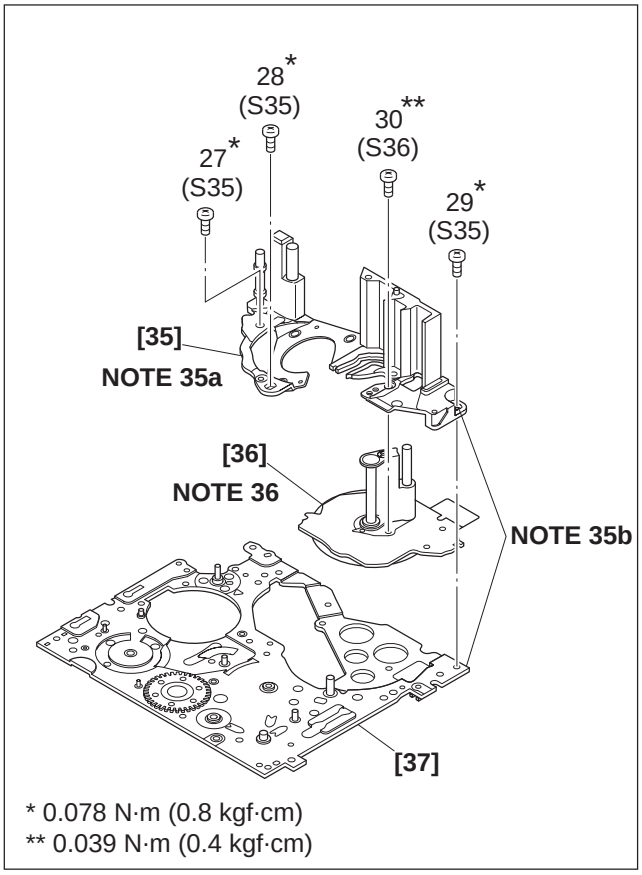
When [35]DRUM BASE ASSY is properly attached, the screw hole tends to be located at the center of the oval.

When the screw hole is located far from the center of the oval, operational defection or abnormal sound may occur.



Before removing [35]DRUM BASE ASSY, confirm the position of [35]DRUM BASE ASSY by seeing the length (A), as shown in the left figure.

When reattaching [35]DRUM BASE ASSY, confirm the position to reattach [35]DRUM BASE ASSY by seeing the length (A). Be sure to reattach [35]DRUM BASE ASSY to the same position as it has been before the removing procedure.



* 0.078 N·m (0.8 kgf·cm)
** 0.039 N·m (0.4 kgf·cm)

Fig.2-1-24

2.1.6 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE

[24]MODE GEAR

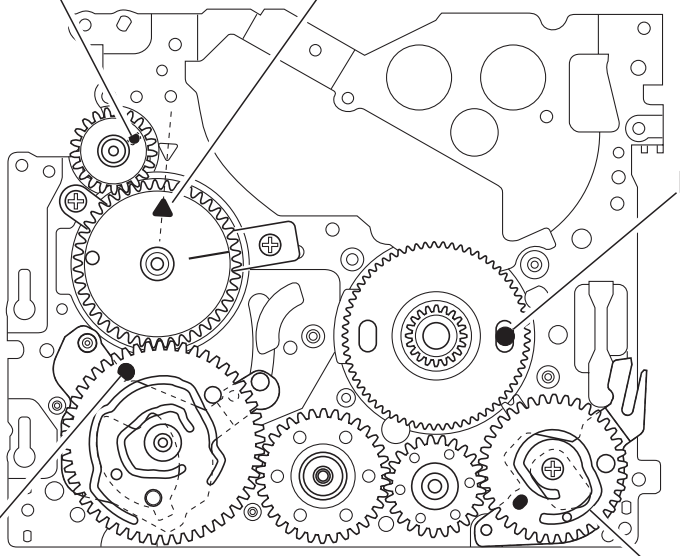
Align the MODE GEAR with the Main Deck Assembly hole.

Note:
The MODE GEAR may be displaced during the mechanism operation, however it can be checked from the rear and realigned during manual assembly.

[27]ROTARY ENCODER

Mount the ROTARY ENCODER by aligning its mark (△) and the mark (▽) of the Main Deck Assembly.

Note:
Be careful when handling the FPC during mounting.



[34]REEL GEAR 1

Align the REEL GEAR 1 with the Main Deck Assembly hole.

Note:
The REEL GEAR 1 may be displaced during mechanism operation, however this can be checked from the rear and realigned during manual assembly.

[29]MAIN CAM ASSY/[30]SLIDE ARM ASSY

When mounting the SLIDE ARM ASSY align it with the Main Deck Assembly and MAIN CAM ASSY holes.

Note:
During the mounting procedure, make sure that the[32] SUB CAM ASSY is in the correct mounting position.

[32]SUB CAM ASSY/[33] CONTROL ARM ASSY

Mount the SUB CAM ASSY hole to align with the CONTROL ARM ASSY and Main Deck Assembly holes and then tighten them all together with a screw.

Note:
When mounting it, make sure that the[29]MAIN CAM ASSY is in the correct mounting position.

Fig.2-1-25

2.1.7 MECHANISM ADJUSTMENTS

2.1.7.1 Adjustment of the slide guide plate

Use Fig. 2-1-26 as the reference unless otherwise specified.

(1) Set the PLAY mode. See Fig. 2-1-8.
(2) Loosen the screws (**A**, **B**).
(3) With the Main Deck and Slide Deck Assemblies pushed into the unit, tighten the screws (**A**, **B**) while applying pressure to the stud (shaft) on the Slide Guide plate.
The pressure applied should be enough to enable utilization of the rebounding force of the springs.
The tightening torque should be 0.069 N•m (0.7 kgf•cm).
(4) Check the operation.
Repeat unloading and loading several times and make sure that these operations can be performed smoothly without producing rattles.

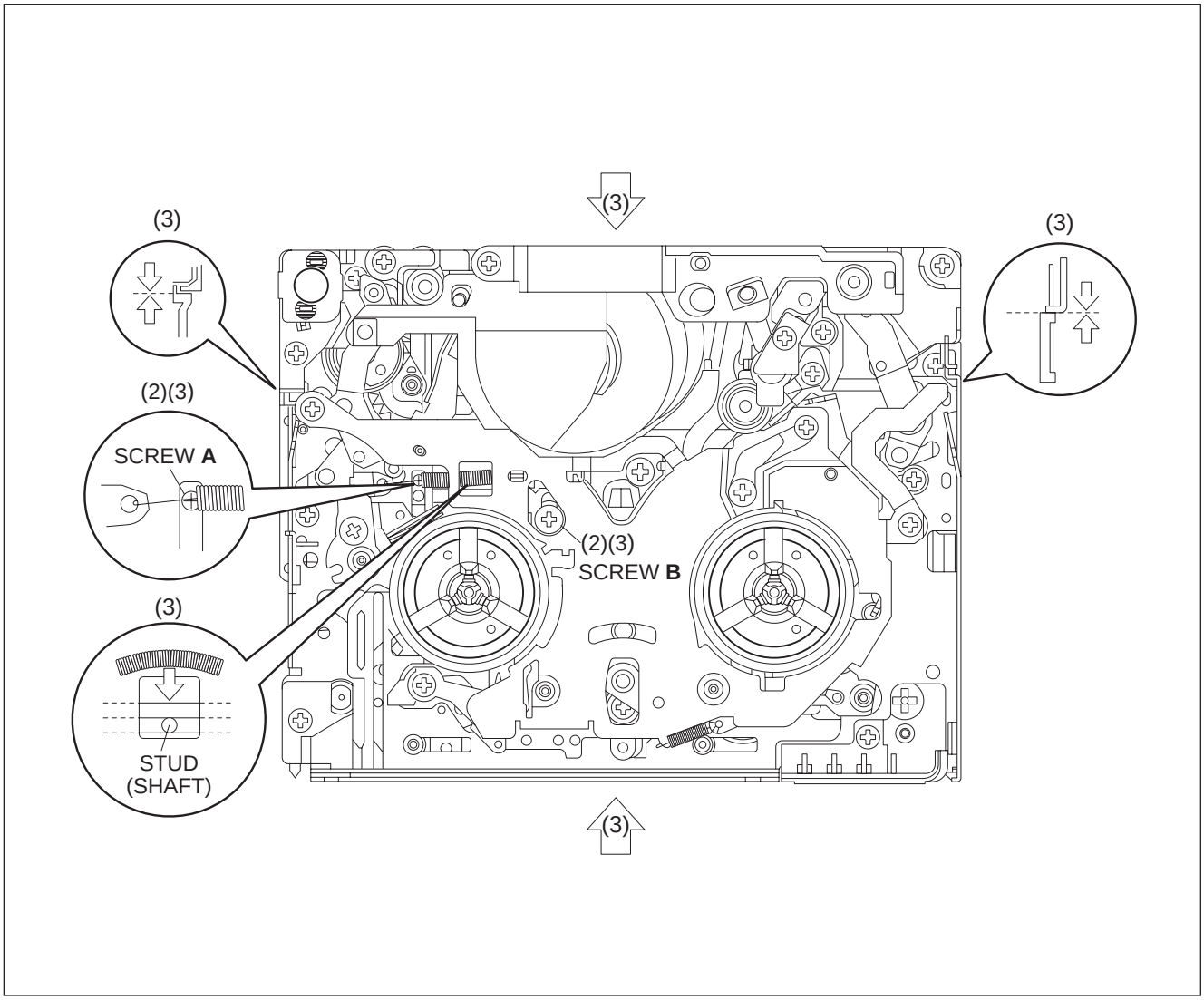


Fig.2-1-26

2.1.7.2 Adjustment of the Tension Arm and Pad Arm Assemblies

Use Fig. 2-1-27 as the reference unless otherwise specified.

(1) Set the PLAY mode.
See Fig. 2-1-8.
(2) Loosen the screw **A**.
(3) With the take-up side at the bottom, align the extreme end of the Tension Arm Assembly with the crossed grooves on the screw **B** that retains the Loading Motor Assembly and then tighten the screw **A**.
The tightening torque should be 0.069 N•m (0.7 kgf•cm).
(4) Check the operation.
Repeat unloading and loading several times and make sure that the Tension Arm Assembly is located within the normal range.

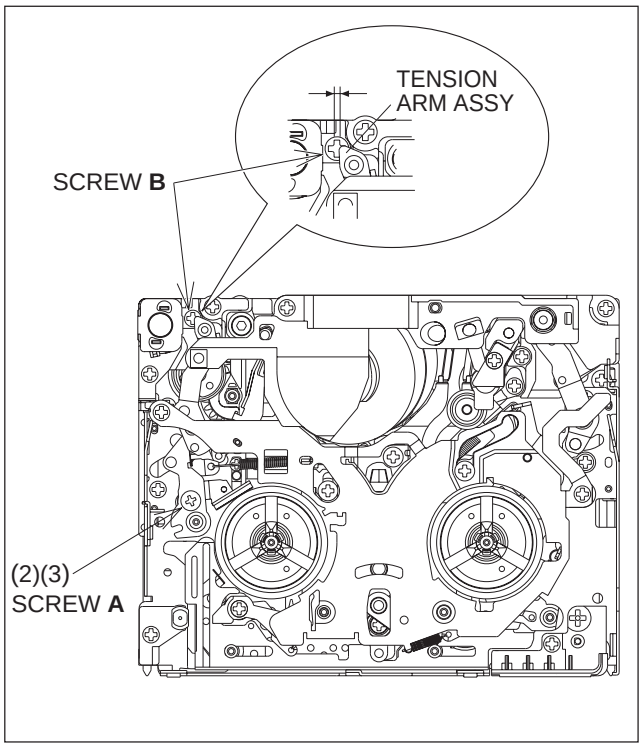


Fig.2-1-27

2.1.7.3 Adjustment of the Slide Lever 2

Use Fig. 2-1-28 as the reference unless otherwise specified.

(1) Set the C IN mode.
See Fig. 2-1-4.
(2) Loosen the screw **A**.
(3) Set the Main Deck and Slide Deck Assemblies apart so that they do not rattle, then tighten the screw **A** by screwing it fully toward the Drum Assembly.
The tightening torque should be 0.069 N•m (0.7 kgf•cm).
(4) Check the operation.
Repeat unloading and loading several times and make sure that these operations can be performed smoothly without producing rattles.

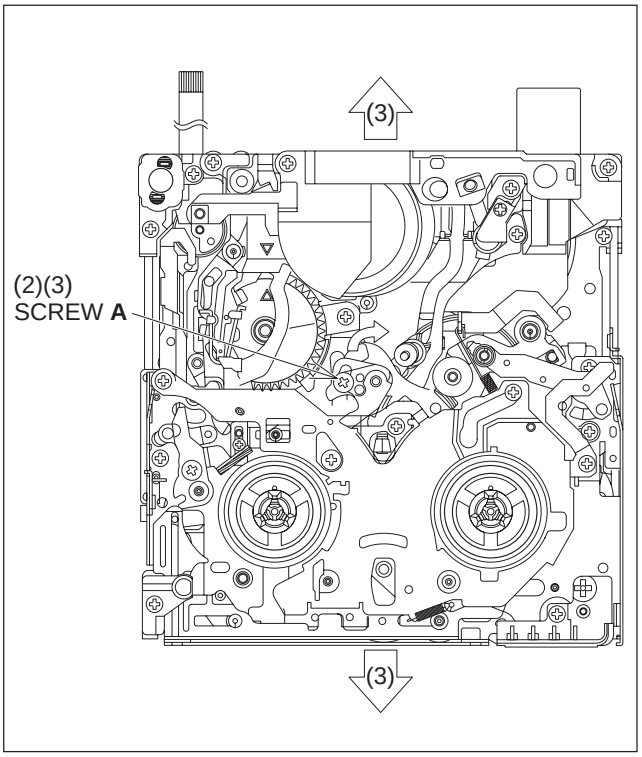


Fig.2-1-28

2.1.8 SERVICE NOTE

Use the following chart to manage mechanism parts that are removed for disassembling the mechanism.

Fig.2-1-14

[1] CASSETTE HOUSING ASSY

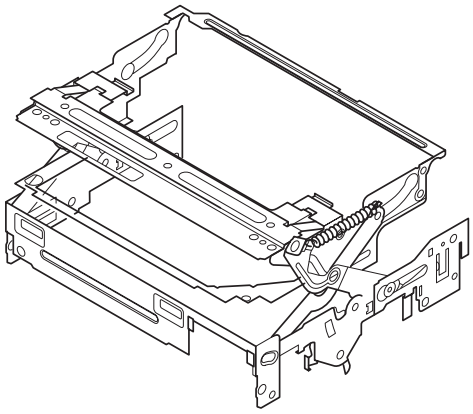


Fig.2-1-15

[2] UPPER BASE ASSY

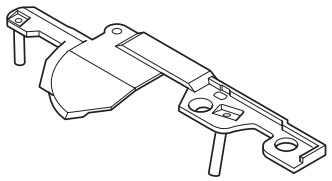


Fig.2-1-15

[3] DRUM ASSY

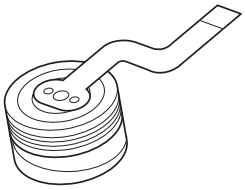
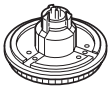
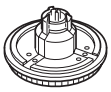


Fig.2-1-16

[4] REEL DISK ASSY(SUP)



[5] REEL DISK ASSY(TU)



[6] REEL COVER ASSY

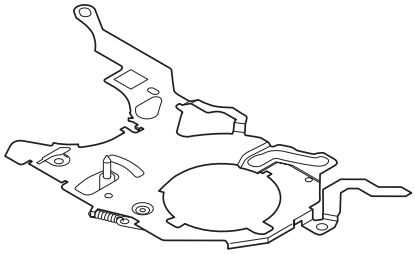
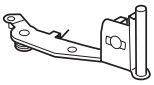


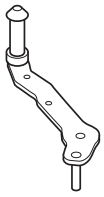
Fig.2-1-17

[7] TENSION ARM ASSY

[8] SLANT POLE ARM ASSY



[9] TU ARM ASSY



[10] SWING ARM ASSY

Fig.2-1-18

[11] SLIDE DECK ASSY

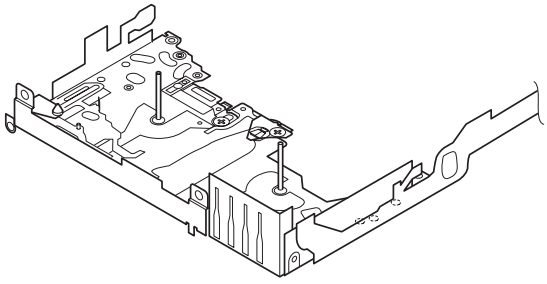


Fig.2-1-19

[12] PAD ARM ASSY

[13]

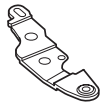
—

[14] TU BRAKE ASSY

Fig.2-1-29

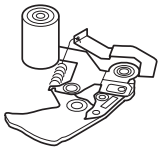
Fig.2-1-20

[15] TENSION CTL LEVER ASSY

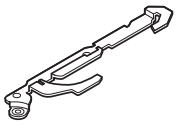


[16] CENTER GEAR

[17] PINCH ROLLER ARM F. ASSY



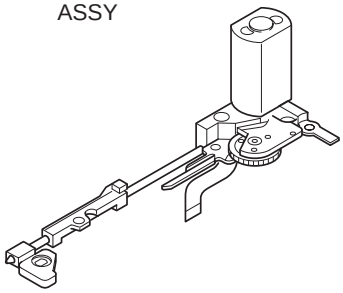
[18] TENSION CTL PLATE ASSY



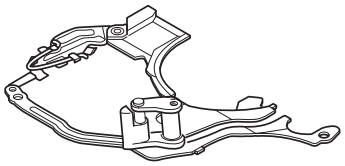
[19] BRAKE CTL LEVER ASSY

Fig.2-1-21

[20] MOTOR BRACKET ASSY



[21] GUIDE RAIL ASSY



[22] SLIDE LEVER 2 ASSY

[23] LOADING PLATE ASSY

[24] MODE GEAR

[25] EJECT LEVER

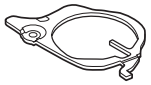
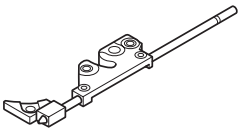
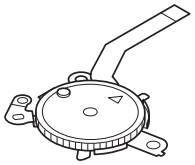


Fig.2-1-22

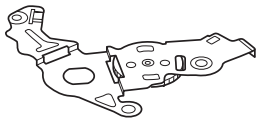
[26] BASE R ASSY



[27] ROTARY ENCODER



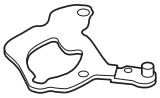
[28] GEAR COVER ASSY



[29] MAIN CAM ASSY

Fig.2-1-23

[30] SLIDE ARM ASSY



[31] CONNECT GEAR 2

[32] SUB CAM ASSY

[33] CONTROL ARM ASSY

[34] REEL GEAR 1

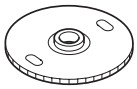
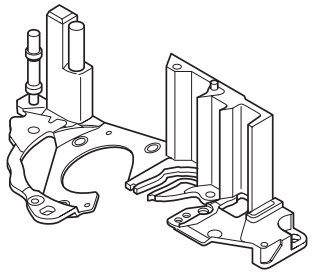
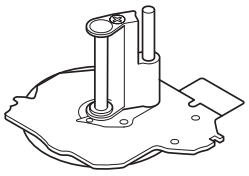


Fig.2-1-24

[35] DRUM BASE ASSY



[36] CAPSTAN MOTOR



[37] MAIN DECK ASSY

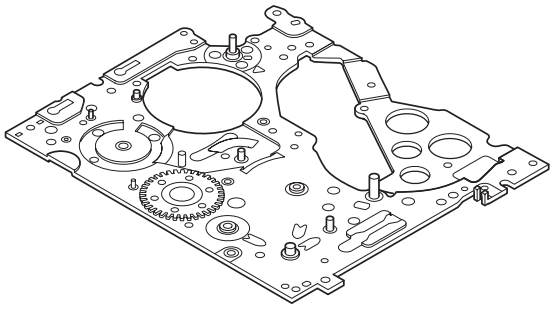


Fig.2-1-30

2.1.9 SERVICE NOTE

Use the following chart to manage screws.

Symbol No.	[1]			[2]	[3]			[6]			[10]	[11]			[20]			[21]	[22]	
Removing order of screw	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Place to stick screw																				
Reference drawing (Fig. No.2-1-**)	14				15				16		17		18			21			22	
Screw tightening torque	Ⅰ				Ⅱ															Ⅲ

Symbol No.	[27]			[28]			[32]	[35]			[36]
Removing order of screw	21	22	23	24	25	26	27	28	29	30	
Place to stick screw											
Reference drawing (Fig. No.2-1-**)	22					23	24				
Screw tightening torque	Ⅱ						Ⅳ			Ⅴ	

<NOTE>

·Pay careful attention to tightening torque for each screw.

Ⅰ : 0.069N·m(0.7kgf·cm)　　Ⅱ : 0.055N·m(0.56kgf·cm)　　Ⅲ : 0.0198N·m(0.2kgf·cm)

Ⅳ : 0.078N·m(0.8kgf·cm)　　Ⅴ : 0.039N·m(0.4kgf·cm)

Fig.2-1-31

2.1.10 REMARKS

2.1.10.1 Cleaning

(1) For cleaning of the upper drum (particularly video heads), use fine-woven cotton cloth with alcohol soaks through. Do not move the cloth but turn the upper drum counterclockwise.

NOTE:
Make sure not to move the cloth in the vertical direction to the video head, since it may cause damage of the video heads.

(2) For cleaning of parts of the tape transport system except the upper drum, use fine-woven cotton cloth or cotton swab soaked alcohol.

(3) After cleaning, confirm that the cleaned parts are completely dry before loading the deck with cassette tape.

2.1.10.2 Applying oil and grease

(1) Periodical oiling and greasing are not required but should be done to new parts when replacing. If oil and grease on the other parts of the other party are old and dirty, wipe them clean and apply new oil or grease.

(2) For parts and points to apply oil and grease, refer to the exploded view of the 3.1 DVC MECHANISM ASSEMBLY. Fig.2-1-32 specifies oil and grease to be used.

(3) When oiling, clean the objective parts with alcohol first and apply one or two drop(s) of oil. Too much oiling causes rotary parts to slip because of oil leakage.

Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	YTU94027	BB
Grease (HANARL)	RX-410R	CC

specifies oil and grease to be used

Fig.2-1-32

2.2 VHS-C MECHANISM

2.2.1 Precautions

(1) When fastening parts, pay careful attention to the tightening torque of each screw. Unless otherwise specified, tighten a screw with the torque of 0.216 N•m (2.2 kgf•cm). Torque setting value of torque driver is limited. At the values over the maximum torque setting value, fasten a screw manually not to damage the screw thread.
(2) Be sure to disconnect the set from the power supply before fastening and soldering parts.
(3) When disconnecting/connecting wires, be careful not to get them and their connectors damaged.
(4) When replacing parts, be very careful neither to damage other parts nor to fit wrong parts by mistake.

Example

STEP/LOC. No.	PART NAME		FIG.	REMOVAL POINT	INSTALLATION ADJUSTMENT CONDITION NOTE
[1]	ROLLER BASE ASSEMBLY	T	M1	(S1)	–
[2]	TENSION ARM ASSEMBLY	T	M1	(P1), (W1a)	–
[3]	REEL DISC (SUP)	T	M1	(W1a), (W1b)	–
↑ *1	↑ *2	↑ *3	↑ *4	↑ *5	↑ *6

2.2.2 How to read the disassembly and assembly

*1 Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.
*2 Part to Name be removed or installed.
*3 Location of part.

T = The Upper side
B = The Lower side

*4 Fig. No. showing Procedure or Part Location.
M = Mechanism
*5 Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.

P = Spring
W = Washer
S = Screw
* = Unhook, unlock, release, unplug or unsolder.

Example

- Remove (W1)=Washer W1.
- Remove the solder at (SD1)=Point SD1.
- Disconnect A = Connector A.

*6 Adjustment information for installation.
(+) = Refer to Exploded Views for Lubrication information.

2.2.3 DISASSEMBLY/ASSEMBLY PROCEDRURE TABLE

This procedure starts with the condition that the cabinet parts and deck parts. Also, all the following procedures for adjustment and parts replacement should be performed in STOP mode. When reassembling, perform the step(s) in the reverse order.

STEP/LOC. No.	PART NAME		FIG.	REMOVAL POINT	INSTALLATION ADJUSTMENT CONDITION NOTE
[1]	ROLLER BASE ASSY	T	M1	(1)	–
[2]	TENSION ARM ASSY	T	M1	(P1), (W1a)	–
[3]	REEL DISC	T	M1	(W1a), (W1b)	–
[4]	SLANT ARM ASSY	T	M1	(W1a)	–
[5]	CANCEL LEVER ASSY	T	M2	(W2)	–
[6]	EJECT LEVER ASSY	T	M2	(W2)	–
[7]	CASSETTE GUIDE (LEFT)	T	M2	(2)	–
[8]	SUPPLY CLUTCH ASSY	T	M2	(W2)	–
[9]	WHEEL GEAR	T	M2	(W2)	See, Adjustment procedure for Section 2.2.5
[10]	ROTARY ENCODER	B	M3	4(S3a)	The function of this part varies according to the ASSY (VHS/SVHS) which this part is rporated in. (Refer to fig. 2-2-6)
[11]	TIMING BELT	B	M3	–	–
[12]	CENTER PULLEY UNIT	T/B	M3	2(S3a)	–
[13]	CASSETTE GUIDE (R) ASSY	T	M3	(S3b), (P3)	(Only use SVHS model)
[14]	TAKE UP GEAR	T	M3	(W3a)	–
[15]	BRAKE SUB GEAR	T	M3	(W3a)	–
[16]	PINCH ROLLER ARM ASSY	T	M3	(W3b)	–
[17]	TAKE UP GUIDE ARM ASSY	T	M3	(W3a)	–
[18]	LINK ARM ASSY	T	M4	(W4)	–
[19]	LED GUIDE	T	M4	(S4a)	–
[20]	A/C HEAD UNIT	T	M4	2(S4b)	–
[21]	SLANT POLE BASE ASSY	T	M5	(S5a)	–
[22]	CAPSTAN MOTOR	T	M5	3(S5a)	–
[23]	MOTOR BASE	T	M5	2(S5b), (S5c)	–
[24]	BRUSH	B	M6	(S6a)	–
[25]	DRUM FINAL ASSY	T/B	M6	2(S6b), 2(S6c) *CATCHER	–
[26]	GUIDE RAIL	T	M6	7(S6d), 8(S6d)	(Refer to part list.)
[27]	POLE BASE (S)ASSY	T	M6	–	–
[28]	POLE BASE (T)ASSY	T	M6	–	–
[29]	COVER PLATE	T	M7	–	–
[30]	DRIVE LEVER ASSY	T	M7	–	–
[31]	MOTOR BRACKET ASSY	T	M7	3(S7)	–
[32]	CONTROL CAM	T	M8	(W8a)	See, Adjustment procedure for Section 2.2.5
[33]	LINK LEVER	T	M8	_	See, Adjustment procedure for Section 2.2.5
[34]	MIDDLE GEAR	T	M8	–	–
[35]	LOADING GEAR(T) ASSY	T	M8	(W8b)	See, Adjustment procedure for Section 2.2.5
[36]	LOADING GEAR(S) ASSY	T	M8	(W8b)	–
[37]	LOADING RING ASSY	T	M8	4(S8)	See, Adjustment procedure for Section 2.2.5

Fig.2-2-1

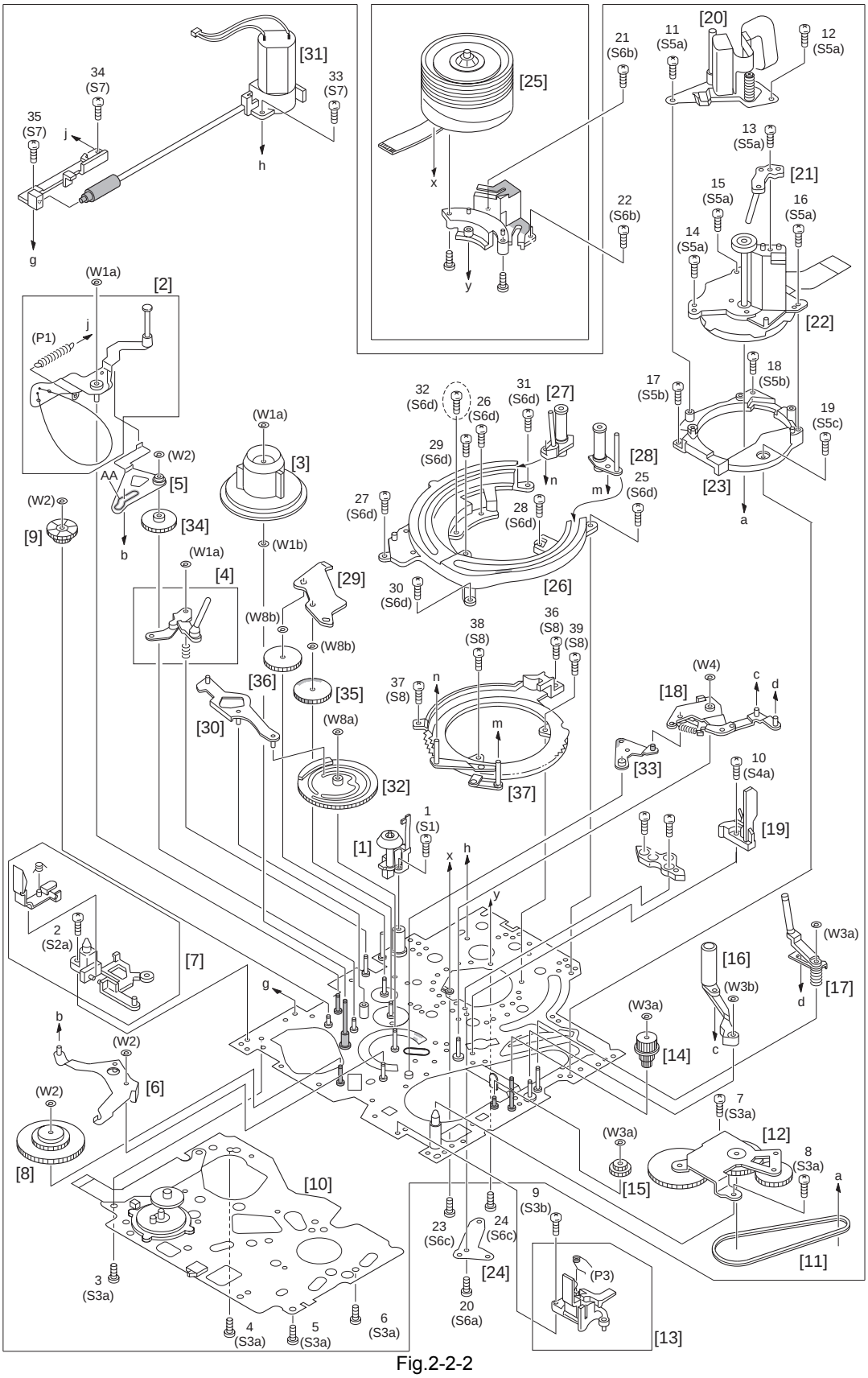

[31]
34 (S7)
33 (S7)
35 (S7)
j
h
g
[25]
x
y
21 (S6b)
22 (S6b)
[20]
11 (S5a)
12 (S5a)
13 (S5a)
[21]
15 (S5a)
16 (S5a)
14 (S5a)
[22]
(W1a)
[2]
(P1)
j
AA
(W2)
[5]
b
[34]
[9]
(W2)
(W1a)
[3]
(W1b)
[4]
[29]
(W8b)
(W8b)
[36]
[35]
[30]
(W8a)
[32]
32 (S6d)
26 (S6d)
31 (S6d)
[27]
29 (S6d)
n
[28]
m
25 (S6d)
27 (S6d)
28 (S6d)
[26]
30 (S6d)
17 (S5b)
18 (S5b)
19 (S5c)
[23]
a
38 (S8)
36 (S8)
39 (S8)
37 (S8)
n
m
[37]
(W4)
c
d
[18]
[33]
10 (S4a)
[19]
[1]
1 (S1)
x
h
y
2 (S2a)
[7]
g
b
(W2)
[6]
(W2)
[8]
[10]
3 (S3a)
4 (S3a)
5 (S3a)
6 (S3a)
23 (S6c)
24 (S6c)
9 (S3b)
[24]
20 (S6a)
(P3)
[13]
(W3a)
[16]
(W3b)
c
(W3a)
[14]
(W3a)
[17]
d
7 (S3a)
(W3a)
[15]
[12]
8 (S3a)
a
[11]

Fig.2-2-2

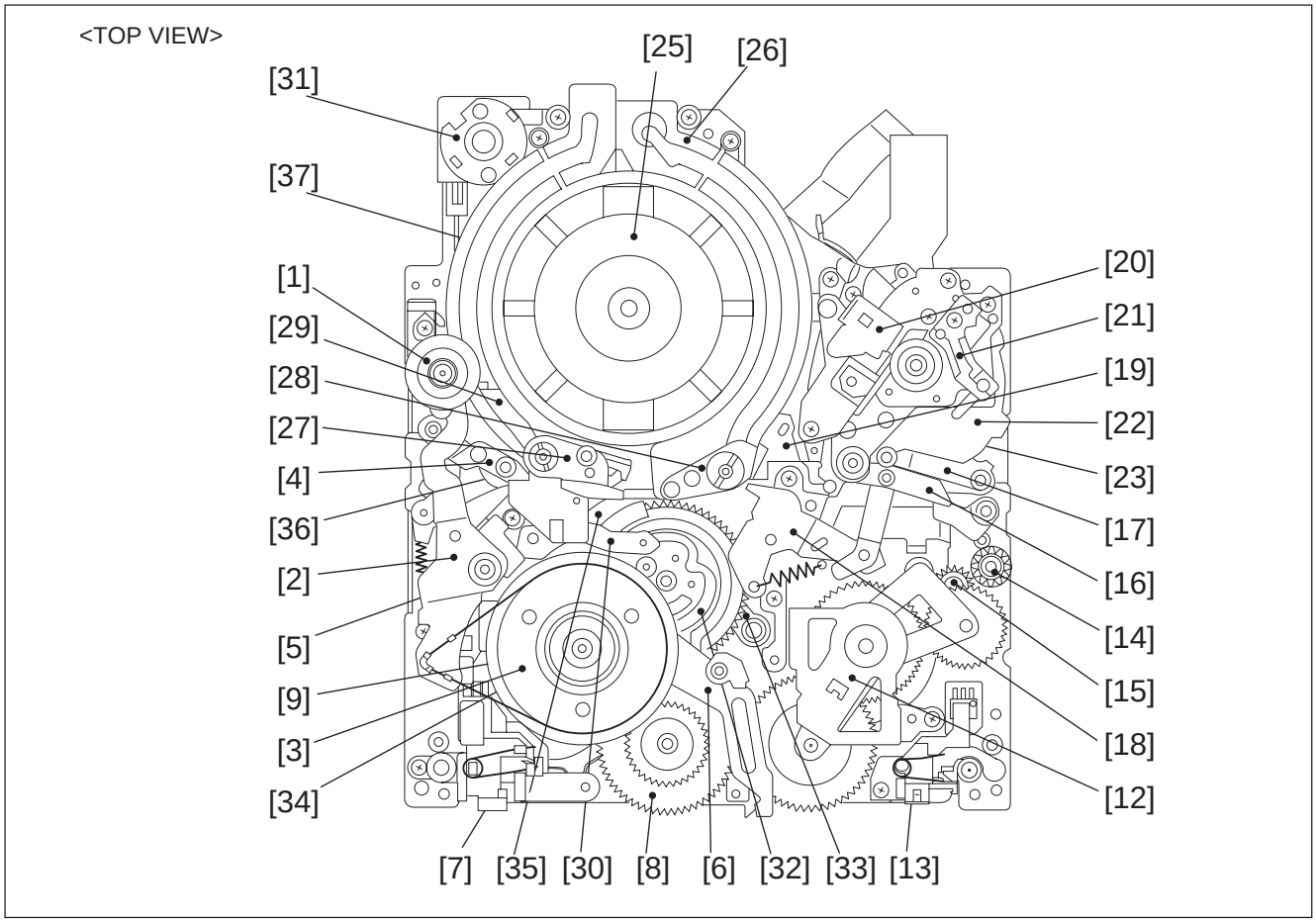


Fig.2-2-3

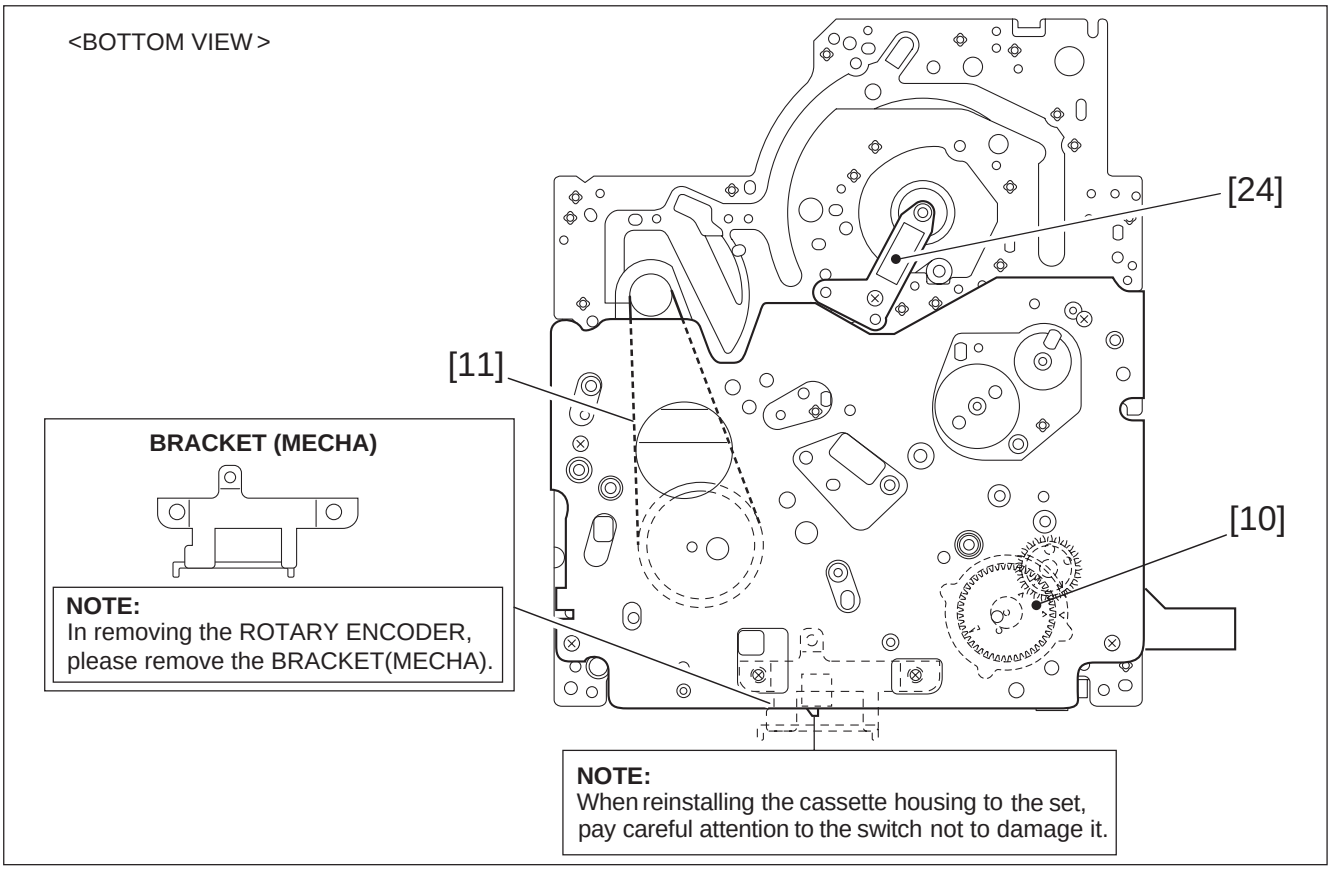

<BOTTOM VIEW>
[24]
[11]
[10]
BRACKET (MECHA)
NOTE:
In removing the ROTARY ENCODER, please remove the BRACKET(MECHA).
NOTE:
When reinstalling the cassette housing to the set, pay careful attention to the switch not to damage it.

Fig.2-2-4

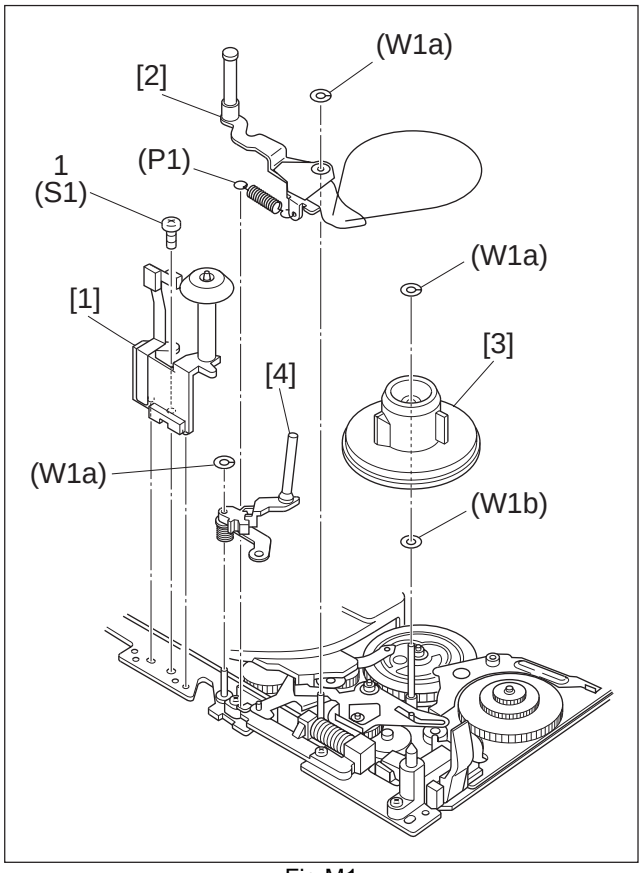


Fig.M1

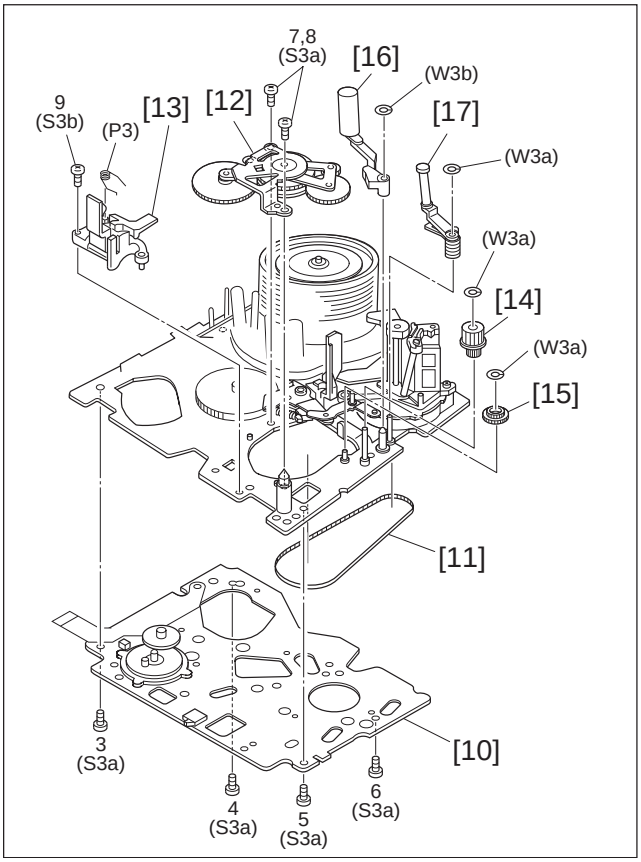


Fig.M3

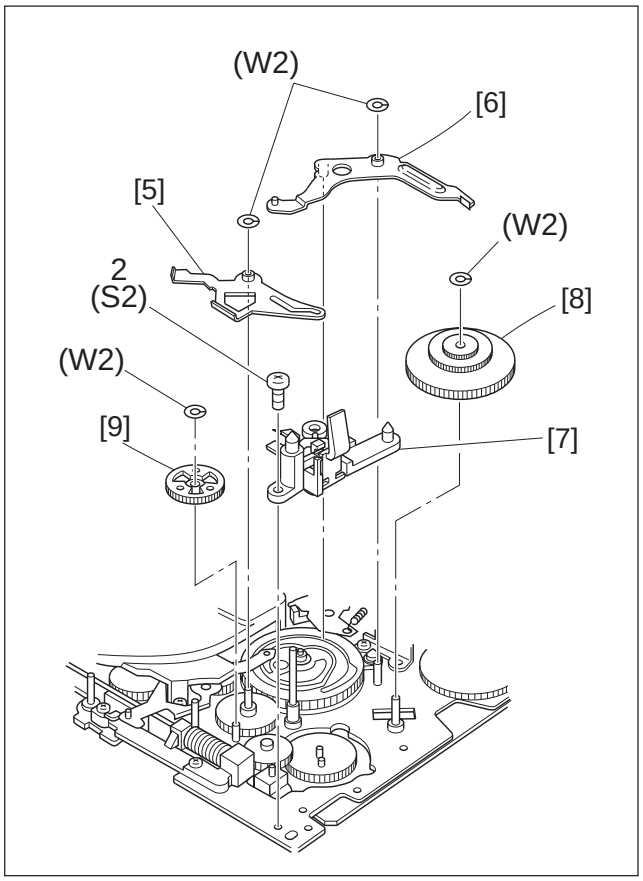


Fig.M2

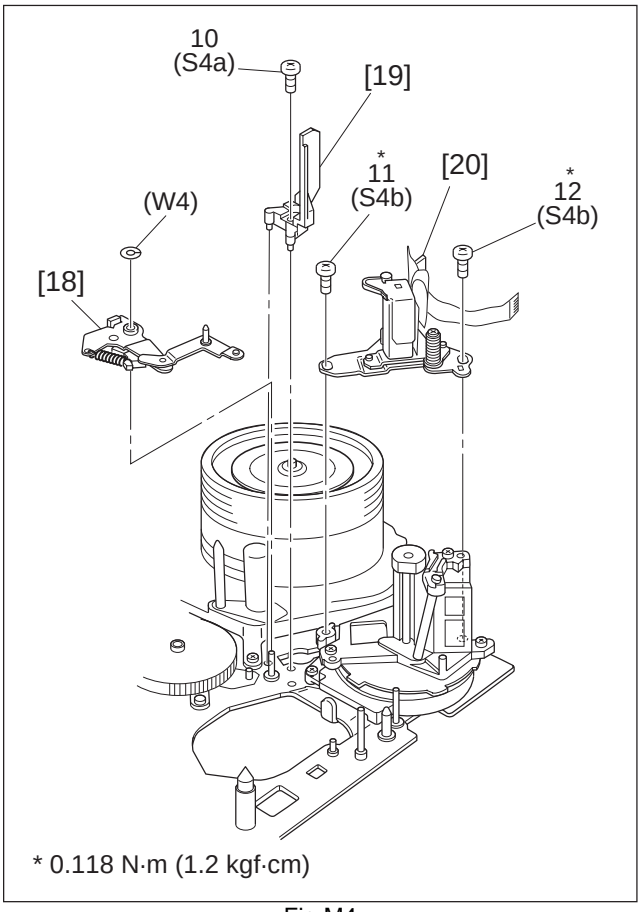


Fig.M4

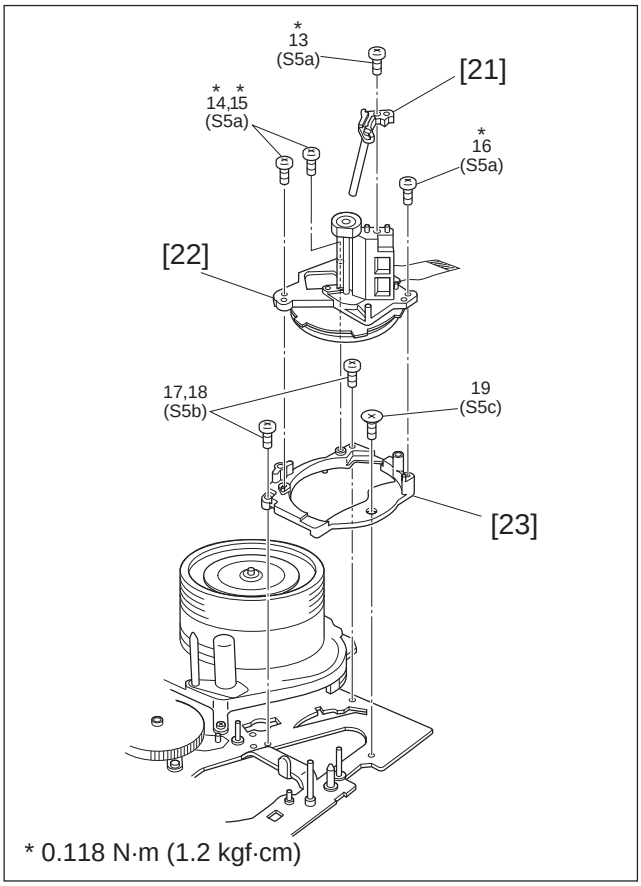


Fig.M5

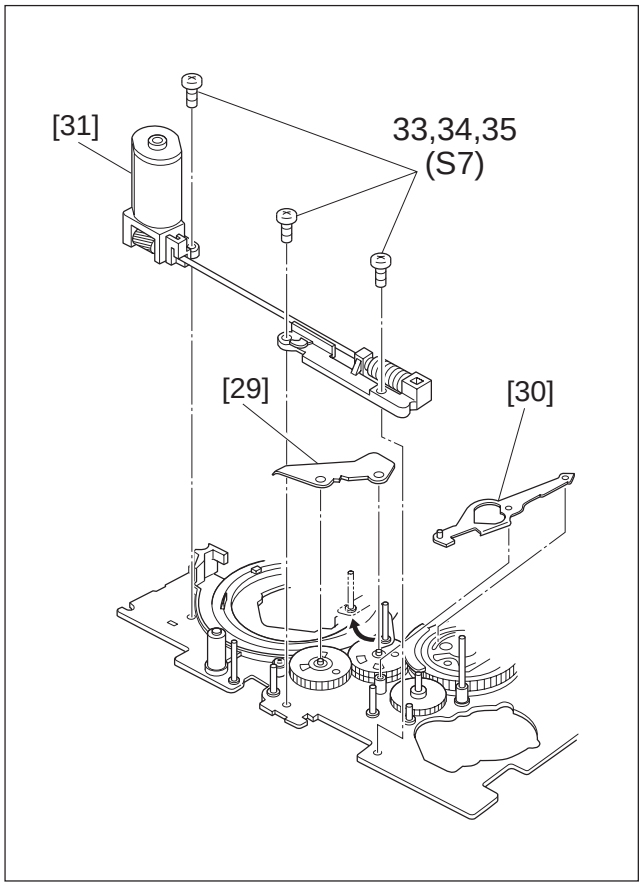


Fig.M7

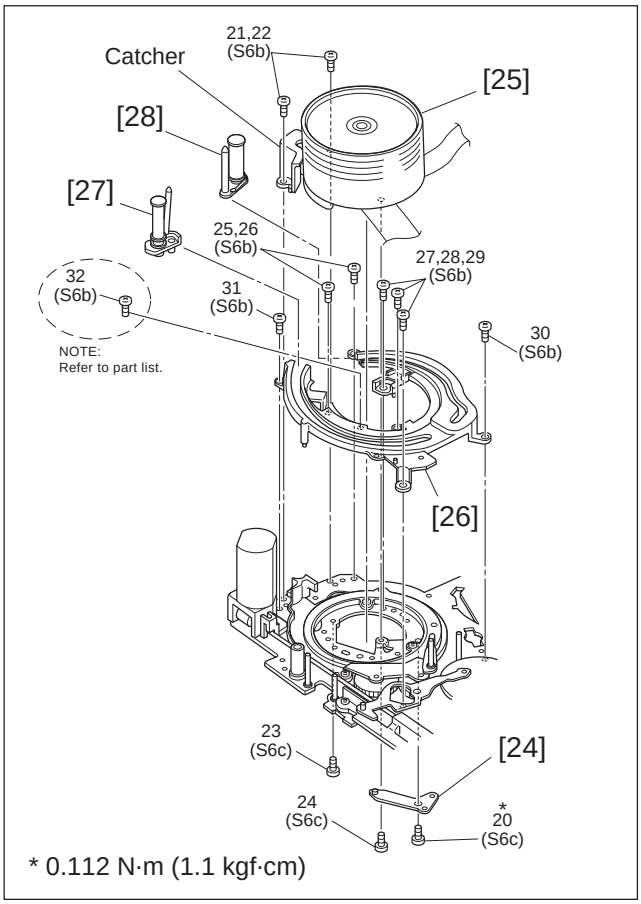


Fig.M6

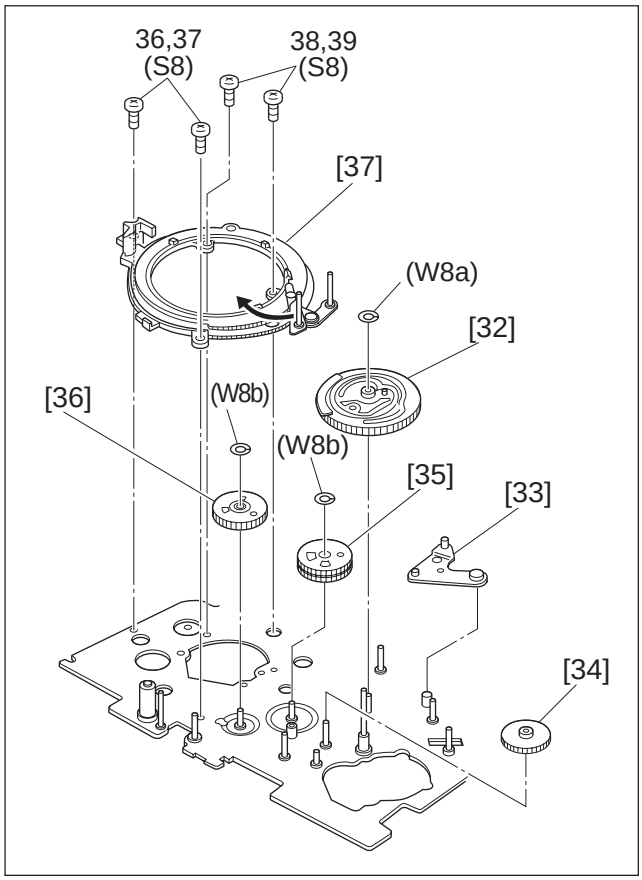


Fig.M8

2.2.4 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE

NOTE:

Pay careful attention to the installing order and phase of mechanism parts of the loading system.

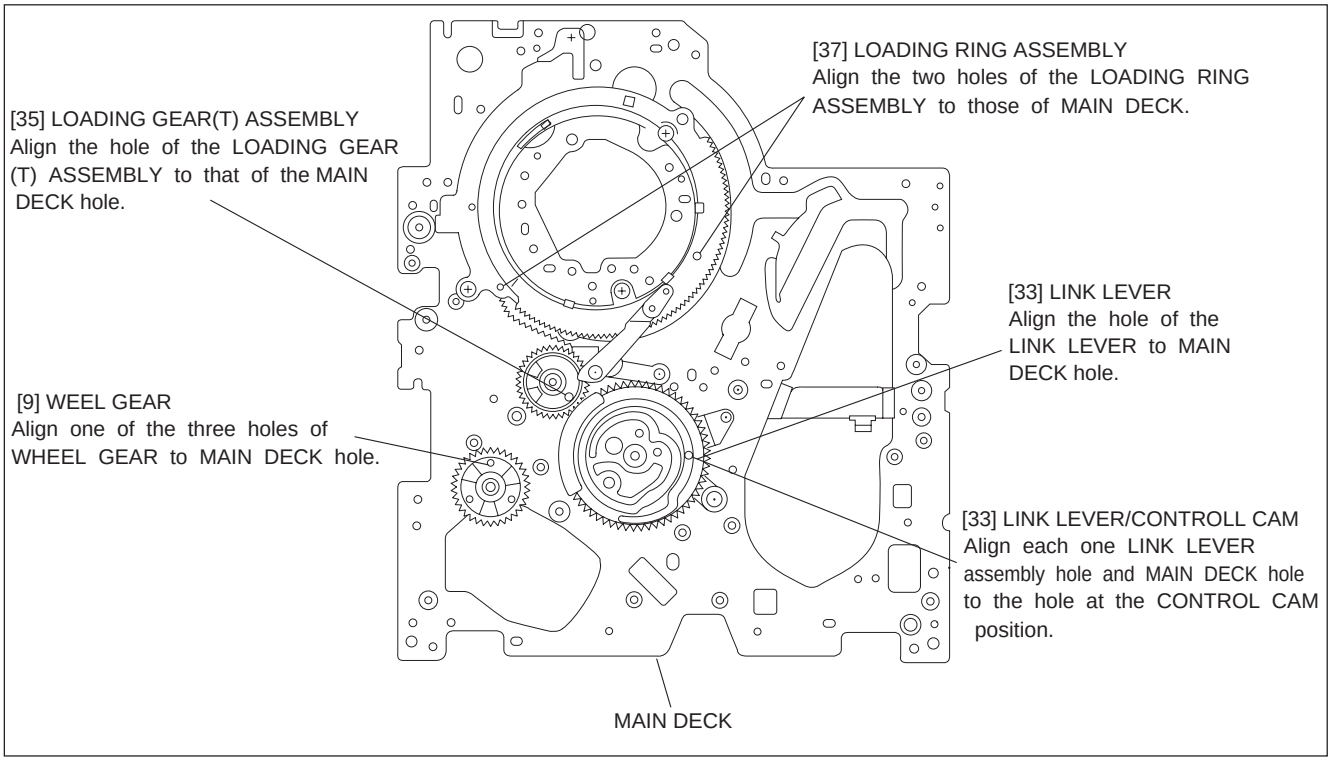

[37] LOADING RING ASSEMBLY
Align the two holes of the LOADING RING ASSEMBLY to those of MAIN DECK.
[35] LOADING GEAR(T) ASSEMBLY
Align the hole of the LOADING GEAR (T) ASSEMBLY to that of the MAIN DECK hole.
[33] LINK LEVER
Align the hole of the LINK LEVER to MAIN DECK hole.
[9] WEEL GEAR
Align one of the three holes of WHEEL GEAR to MAIN DECK hole.
[33] LINK LEVER/CONTROLL CAM
Align each one LINK LEVER assembly hole and MAIN DECK hole to the hole at the CONTROL CAM position.
MAIN DECK

Fig.2-2-5 Top of main deck

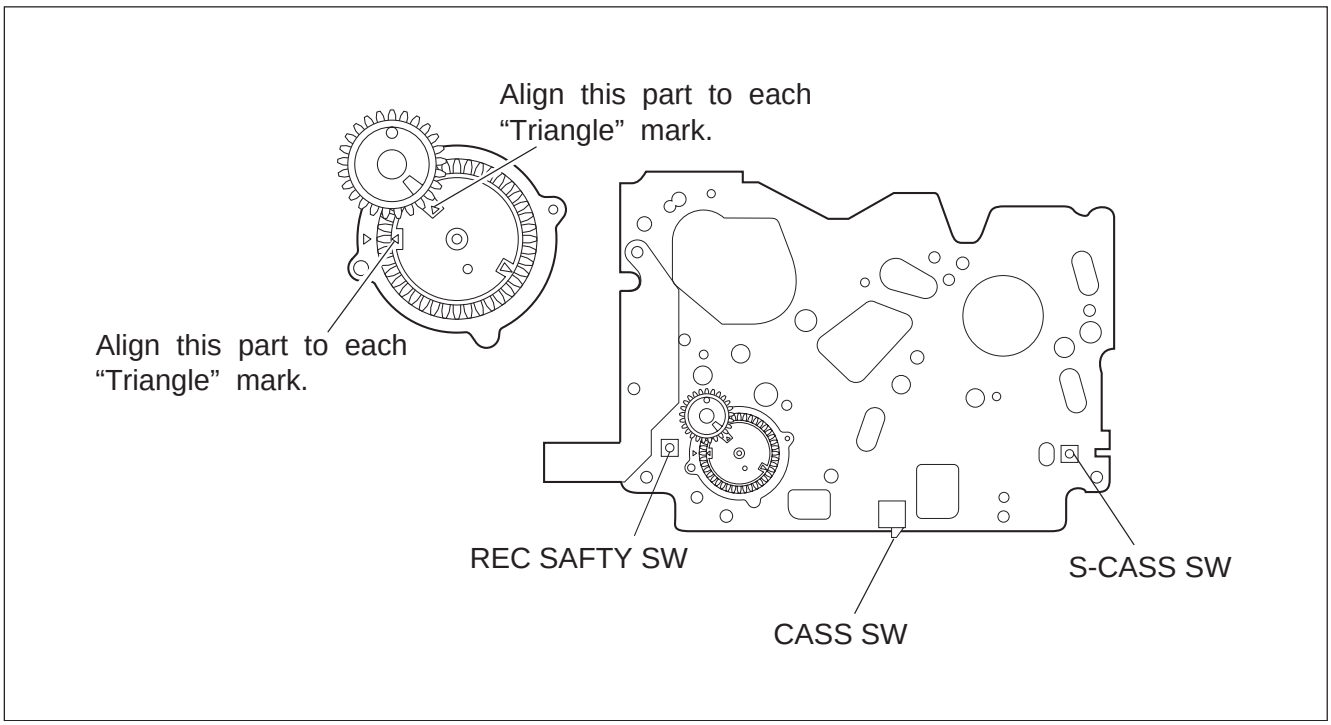


Fig.2-2-6 Rotary encoder

2.2.5 SERVISE NOTE

Use the following chart to manage screws.

Symbol No.	[1]	[7]	[10]				[12]		[13]	[19]	[20]		[21]	[22]			[23]		
Removing order of screw	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Place to stick screw																			
Reference drawing (Fig. No.)	M1	M2	M3							M4			M5						
Screw tightening torque	I										II						I		

Symbol No.	[24]	[25]			[26]							[31]			[37]		
Removing order of screw	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Place to stick screw																				
Reference drawing (Fig. No.)	M6													M7			M8			
Screw tightening torque	III	I																		

<NOTE>

・Pay careful attention to tightening torque for each screw.
Torque setting value of torque driver is limited. At the values over the maximum torque setting value, fasten a screw manually not to damage the screw thread.

I : 0.216N・m(2.2kgf・cm)　　II : 0.118N・m(1.2kgf・cm)　　III : 0.112N・m(1.1kgf・cm)

Fig.2-2-7

2.2.6 REMARKS

2.2.6.1 Cleaning

(1) For cleaning of the upper drum (particularly video heads), use fine-woven cotton cloth with alcohol soaks through. Do not move the cloth but turn the upper drum counterclockwise.

NOTE:
Make sure not to move the cloth in the vertical direction to the video head, since it may cause damage of the video heads.

(2) For cleaning of parts of the tape transport system except the upper drum, use fine-woven cotton cloth or cotton swab soaked alcohol.

(3) After cleaning, confirm that the cleaned parts are completely dry before loading the deck with cassette tape.

2.2.6.2 Applying oil and grease

(1) Periodical oiling and greasing are not required but should be done to new parts when replacing. If oil and grease on the other parts of the other party are old and dirty, wipe them clean and apply new oil or grease.

(2) For parts and points to apply oil and grease, refer to the exploded view of the 3.2 VHS-C MECHANISM ASSEMBLY. Fig.2-2-8 specifies oil and grease to be used.

(3) When oiling, clean the objective parts with alcohol first and apply one or two drop(s) of oil. Too much oiling causes rotary parts to slip because of oil leakage.

Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	YTU94027	BB

specifies oil and grease to be used

Fig.2-2-8

2.3 VHS MECHANISM

2.3.1 Notes

This model's mechanism relates closely to the rotary encoder and system control circuit (the rotary encoder is meshed with the control cam).
The system control circuit detects the mechanism condition using the rotary encoder's phase (internal switch phase). Therefore, the parts such as the rotary encoder, control plate, loading gear and control cam need to be installed correctly in order for the mechanism to operate properly. (For the mechanism phase adjustment, refer to the installation of each part.)

- Before using a soldering iron, be sure to disconnect the power plug from the AC outlet.
- Do not touch any of the adjustment points until a defect position is specified.
- When plugging or unplugging the connector, be sure not to damage the wire.
- Be sure the springs are hooked all the way around and in the correct direction.
- When performing repairs, take care not to damage a catch, etc.

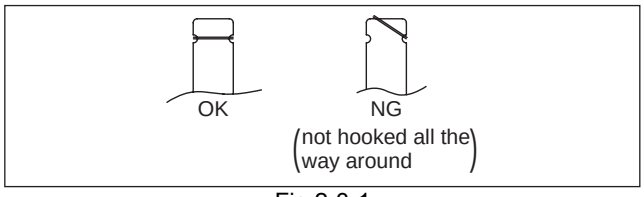


Fig.2-3-1

2.3.2 Mechanism operation check

When the mechanism is operated without a cassette loaded, operate the mechanism in the mechanism service mode.

2.3.3 Setting the mechanism assembling mode

The mechanism-assembling mode is provided with this mechanism. When disassembling and assembling, it is required to engage this mode.
Set the mode by adopting the following procedures.

(1) Remove the mechanism assembly using the disassembling procedure.
(2) Turn gear (a) of the loading motor manually to set the mechanism assembly to the eject end mode. Make sure that the main deck is connected to the guide hole (a) of the drive lever and the seal (a) of the main deck is connected to the mark "E" of the control plate. This condition is called the mechanism-assembling mode.

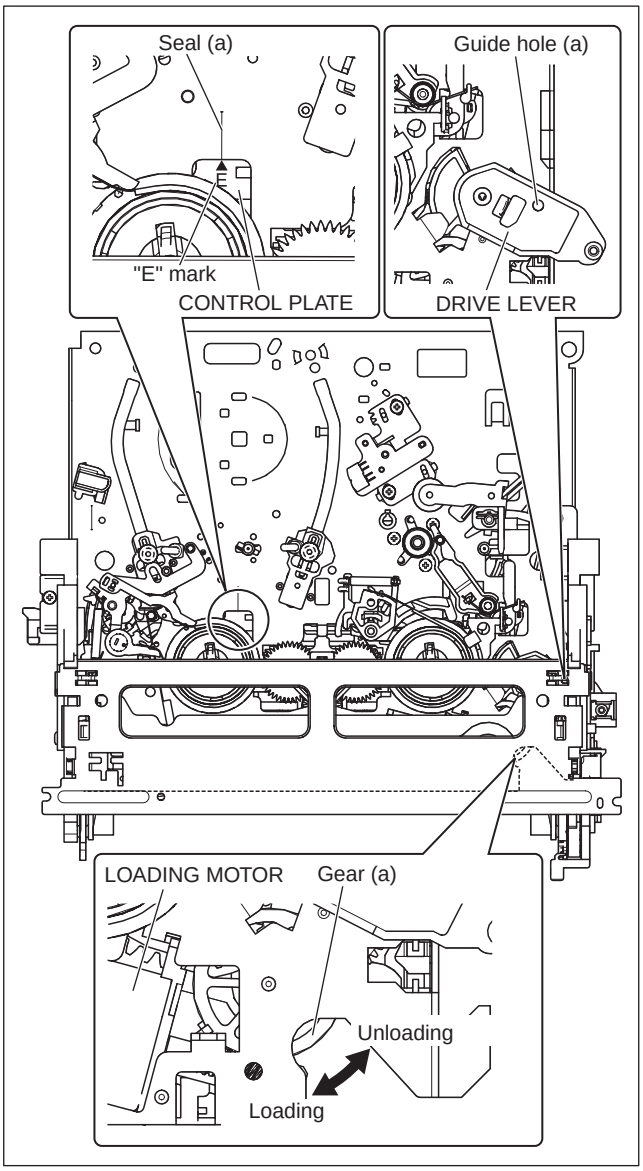


Fig.2-3-2

2.3.4 Layout of the main mechanism parts

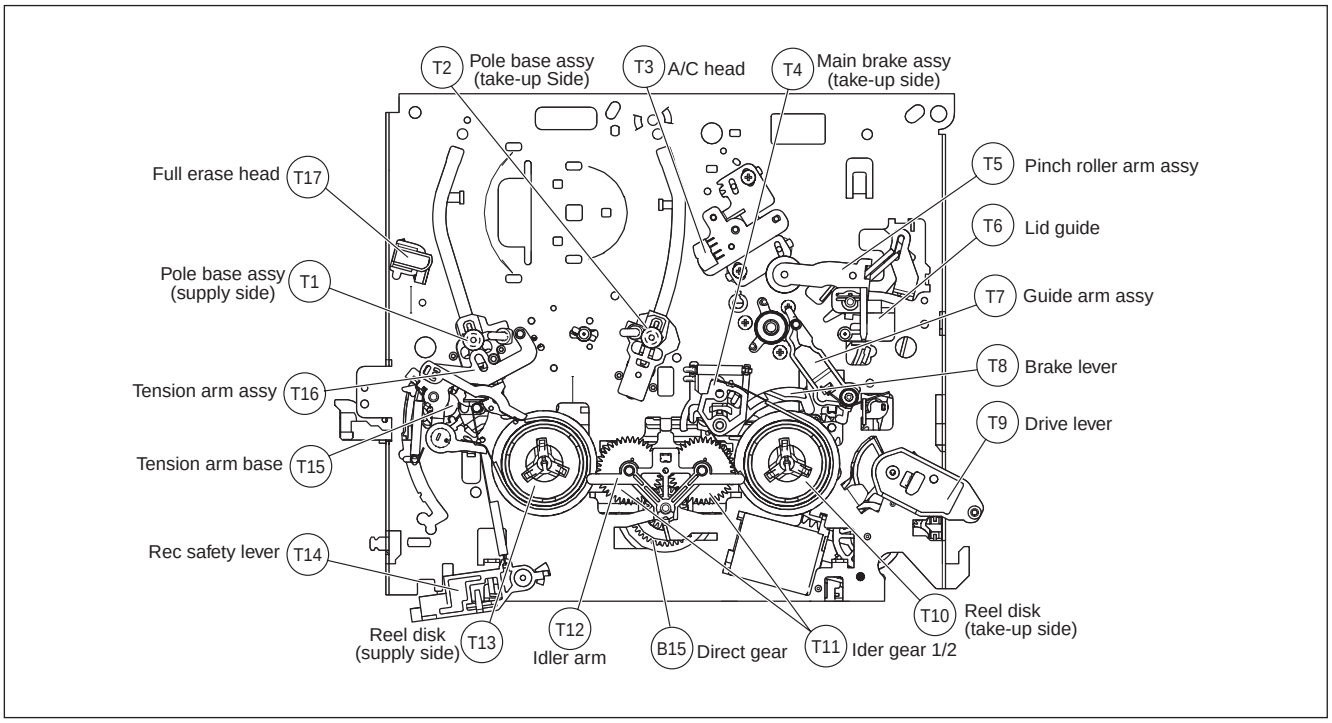

T2 Pole base assy (take-up Side)
T3 A/C head
T4 Main brake assy (take-up side)
Full erase head T17
T5 Pinch roller arm assy
T6 Lid guide
Pole base assy (supply side) T1
T7 Guide arm assy
T8 Brake lever
Tension arm assy T16
T9 Drive lever
Tension arm base T15
Rec safety lever T14
T10 Reel disk (take-up side)
Reel disk (supply side) T13
T12 Idler arm
B15 Direct gear
T11 Ider gear 1/2

Fig.2-3-3

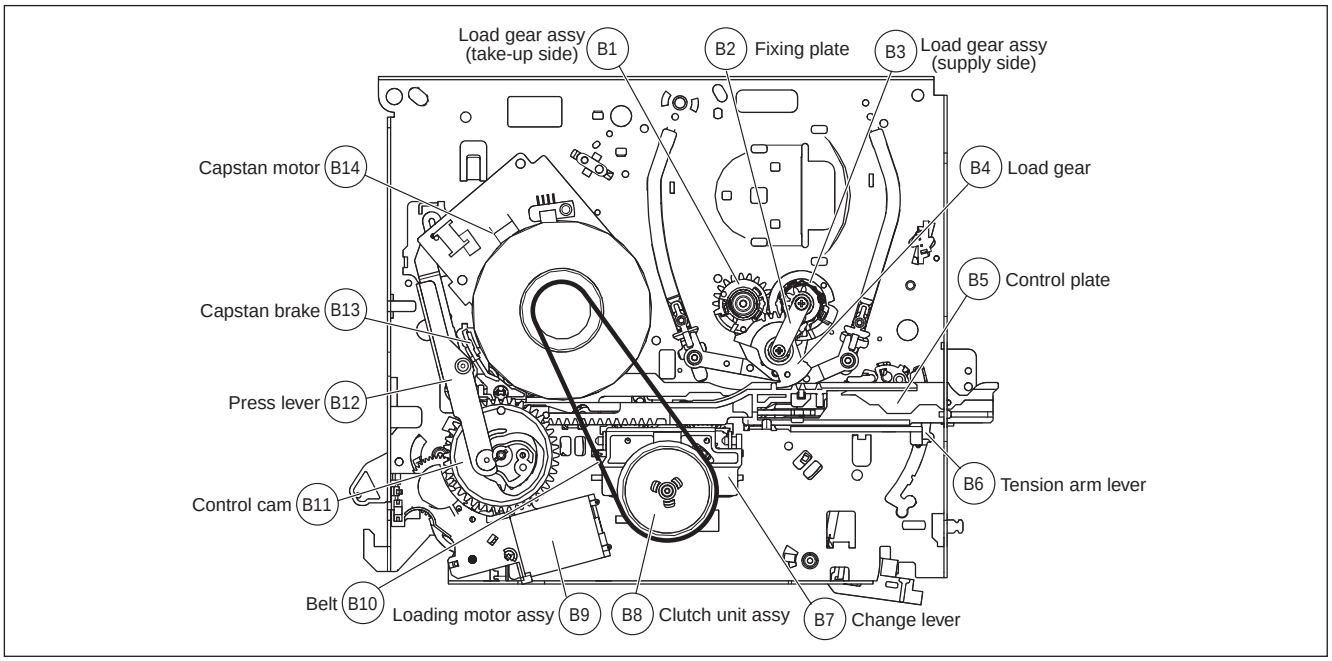


Fig.2-3-4

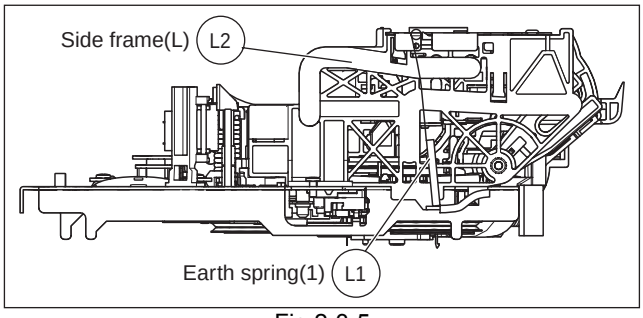


Fig.2-3-5

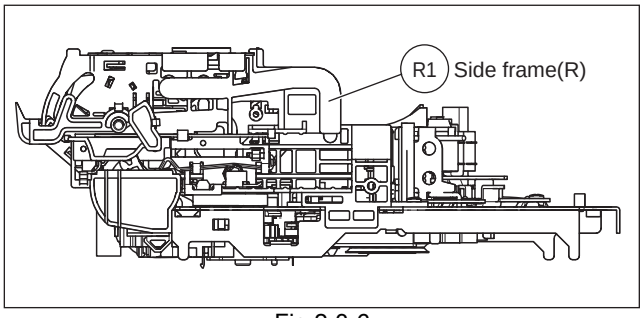


Fig.2-3-6

2.3.5 Disassembling procedure table

This table shows the order of parts removal when replacing each part. For replacement, remove the parts in the order of 1 to 13 shown in the table and install the parts in the reverse order.

The symbol number before each part name shows the number in the figure “Layout of the main mechanism parts”. T and B on the right of each part name show the side from which the part should be removed (T: From the front of the mechanism, B: From the rear of the mechanism, T/B: From both sides).

Symbols and numbers	Removal parts / (Reference items) Replacement parts	Front(T)/Back(B) of mechanism	Number of removal steps	Earth spring (1)	Top frame	Cassette holder	Side frame (L)	Drive arm	Side frame (R)	Lid guide	Idler arm	Idler gear 1/2	Main brake (T)	Reel disk (T)	Tension arm	Tension arm base	Press lever	Control cam	Capstan brake assy	Loading motor assy	Belt	Fixing plate	Load gear	Loading gear assy (S)	Loading gear assy (T)	Control plate	Clutch unit	Direct gear
L1	2.1 Earth spring (1)	T	1																									
-	2.1 Top frame	T	2	1																								
-	2.1 Cassette holder	T	3	1	2																							
L2	2.1 Side frame (L)	T	3	1	2																							
-	2.1 Drive arm	T	5	1	2	3	4																					
R1	2.1 Side frame (R)	T	3	1	2																							
T3	2.2 A/C head	T	1																									
T17	- FE head	T/B	1																									
T7	2.3 Guide arm assy	T	1																									
T6	2.3 Lid guide	T	1																									
T5	2.3 Pinch roller arm assy	T	2							1																		
T12	2.4 Idler arm	T	4	1	2	3																						
T11	2.4 Idler gear 1/2	T	5	1	2	3					4																	
T4	2.5 Main brake assy (T)	T	6	1	2	3					4	5																
T10	2.5 Reel disk (T)	T	7	1	2	3					4	5	6															
T16	2.5 Tension arm	T	6	1	2	3					4	5																
T13	2.5 Reel disk (S)	T	7	1	2	3					4	5			6													
T15	2.5 Tension arm base	T	7	1	2	3					4	5			6													
-	- T-up head	T	8	1	2	3					4	5			6	7												
-	- T-up lever	T	8	1	2	3					4	5			6	7												
T8	2.5 Brake lever	T	8	1	2	3					4	5	6	7														
T14	2.5 Rec safety lever	T	7	1	2	3	4	5	6																			
B12	2.6 Press lever	B	1																									
B11	2.6 Control cam	B	2														1											
B13	2.6 Capstan brake assy	B	3														1	2										
B9	2.6 Loading motor assy	B	4														1	2	3									
B10	2.7 Belt	B	1																									
B14	2.7 Capstan motor	T/B	2																		1							
-	- Wire holder	T/B	1																									
B2	2.7 Fixing plate	B	1																									
B4	2.7 Load gear	B	2																			1						
B3	2.7 Loading gear assy(S)	B	3																			1	2					
B1	2.7 Loading gear assy(T)	B	4																			1	2	3				
T1	- Pole base assy(S)	T/B	4																			1	2	3				
T2	- Pole base assy(T)	T/B	5																			1	2	3	4			
-	- Load gear base	B	5																			1	2	3	4			
B5	2.7 Control plate	B	6														1	2			3	4	5					
T9	- Drive lever	T/B	10	1	2	3	4	5	6								7	8		9								
B8	2.8 Clutch unit	B	2																		1							
B15	2.8 Direct gear	B	3																		1						2	
B7	- Change lever	T/B	6								1	2									3						4	5
B6	- Tension arm lever	T/B	14	1	2	3					4	5			6	7	8	9			10	11	12			13		

2.3.6 REPLACEMENT OF THE MAIN MECHANISM PARTS

2.3.6.1 Cassette holder

2.3.6.1.1 Removal

(1) Remove the screws (a) and (b).
(2) Hold up the top frame, cassette holder assembly, drive arm assembly and side frames (L/R) all together and remove them by releasing the hooks (a) and (b).

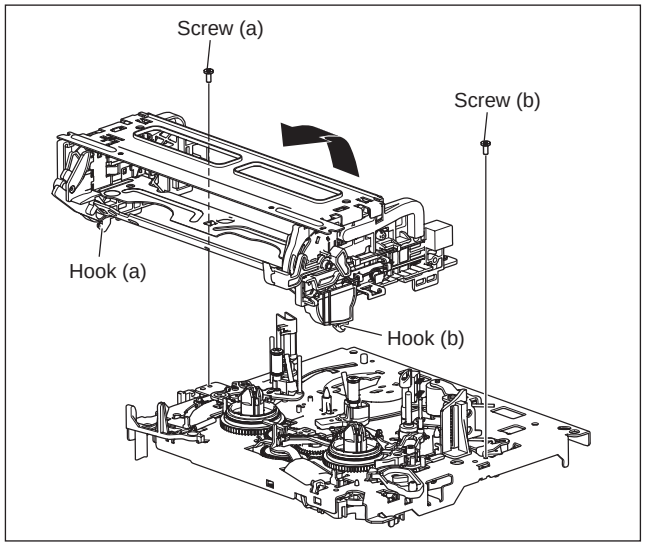


Fig.2-3-7

2.3.6.1.2 Installation (phase adjustment)

(1) Turn gear (a) of the loading motor assembly so that the main deck connects to the guide hole (a) of the drive lever.
(2) Hook the main deck to hooks (a) and (b).
(3) Place the projection of the drive lever to section (a) of the side frame (R) and install the cassette holder to the main deck. Make sure that the bosses of the side frame (L/R) connect with the holes (a) and (b) of the main deck.
(4) Secure screws (a) and (b).

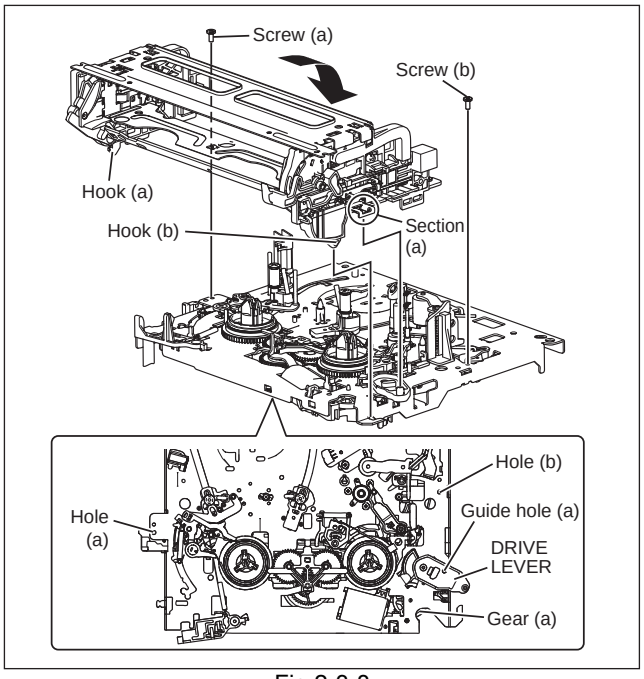


Fig.2-3-8

2.3.6.1.3 Disassembling

(1) Release hook (a) to remove the earth spring (1) from the top frame.
(2) Release the catches (a) and (b) and pull the top frame in the direction shown by the arrow (a) to remove it.
(3) Pull out the side frame (R).
(4) Pull out the cassette holder assembly and drive arm assembly from the side frame (L).

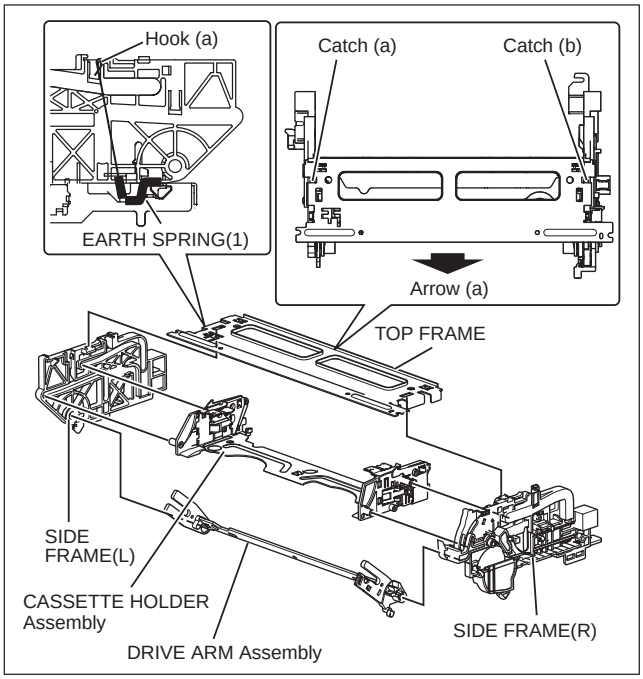


Fig.2-3-9

2.3.6.1.4 Assembling (installation and phase adjustment)

(1) Turn gear (a) of the loading motor assembly so that the main deck connects to the guide hole (a) of the drive lever.
(2) Place the projection of the drive lever on section (a) of the side frame (R) and install the side frame (R) to the main deck.
(3) Secure screw (b).
(4) Place section (b) of the drive arm on the gear of the side frame (R). Make sure that the pin of the door opener connects with section (c) of the drive arm.
(5) Place the drive arm on section (d) of the side frame (L) and install the side frame (L) on the main deck. Be sure to connect the earth spring (1) to the side frame (L).
(6) Secure screw (a).
(7) Turn gear (a) of the loading motor assembly until the drive arm is vertical.
(8) Place the slit of the side frame (L/R) at the foot of the cassette holder assembly and install the cassette holder.
(9) Place the top frame on the position guide (a) of the side frame (L/R) and push it in the direction shown by the arrow (a) for installation.
(10) Hook the earth spring (1) to the hook (a) of the top frame.

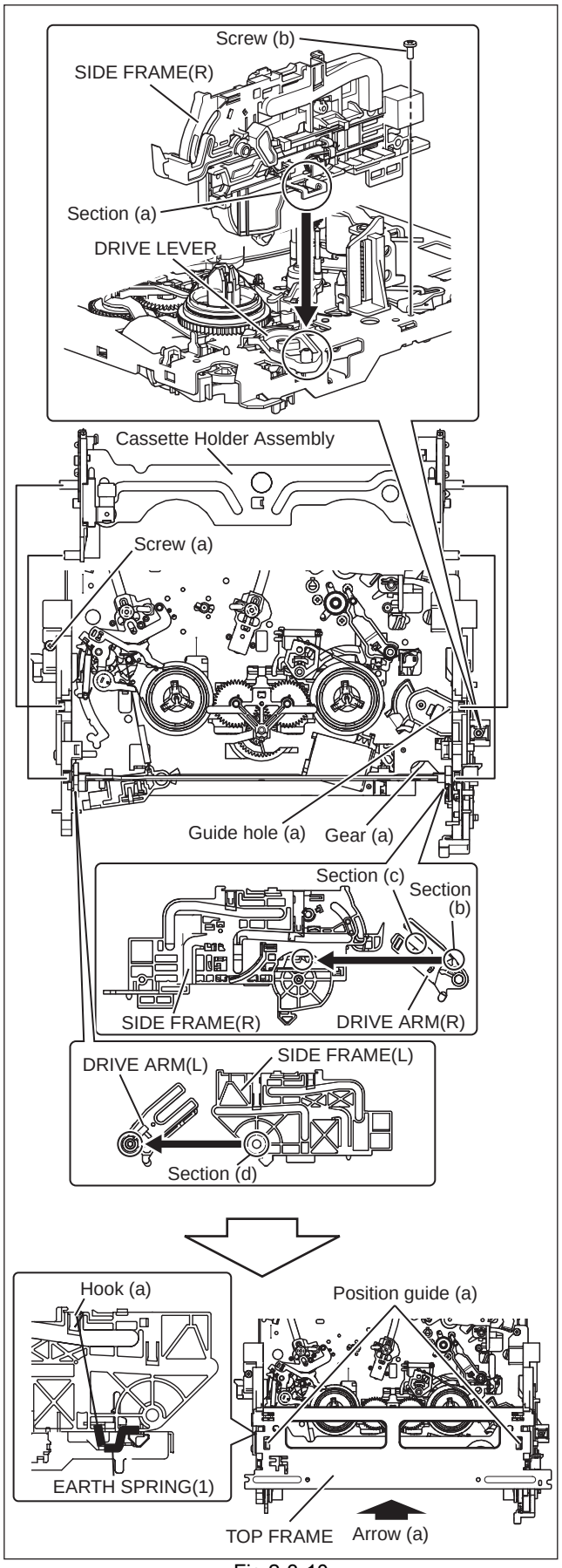


Fig.2-3-10

2.3.6.2 A/C head

2.3.6.2.1 Removal

(1) Remove screws (a) and (b).
(2) Remove the A/C head together with the head base.
(3) Remove the screws (c), (d) and (e) to remove the spring (a) and the A/C head from the Head base.

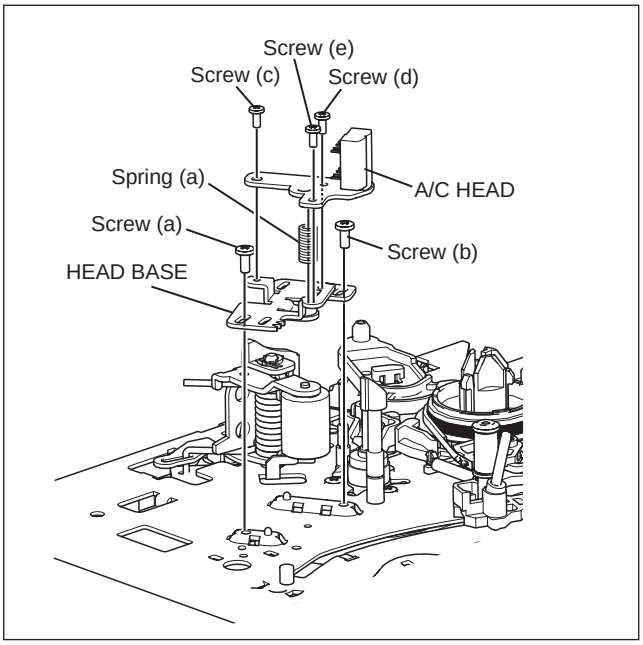


Fig.2-3-11

2.3.6.2.2 Installation (initial setting)

To install the A/C head to the head base, secure the screws in the order of (c), (d) and (e). To make the adjustment easy, temporarily elevate the A/C head.

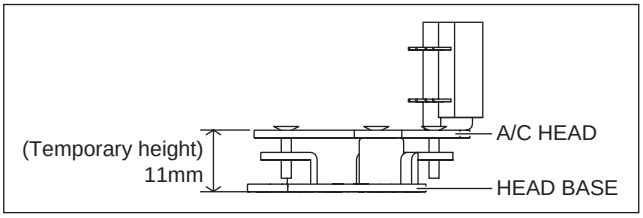


Fig.2-3-12

2.3.6.3 Guide arm, pinch roller arm

2.3.6.3.1 Removal

(1) Remove the spring (a) from the hook (a) and detach the guide arm assembly.
(2) Release the catch (a) to remove the lid guide.
(3) Remove the spring (b) from the hook (b) and detach the pinch roller arm assembly.

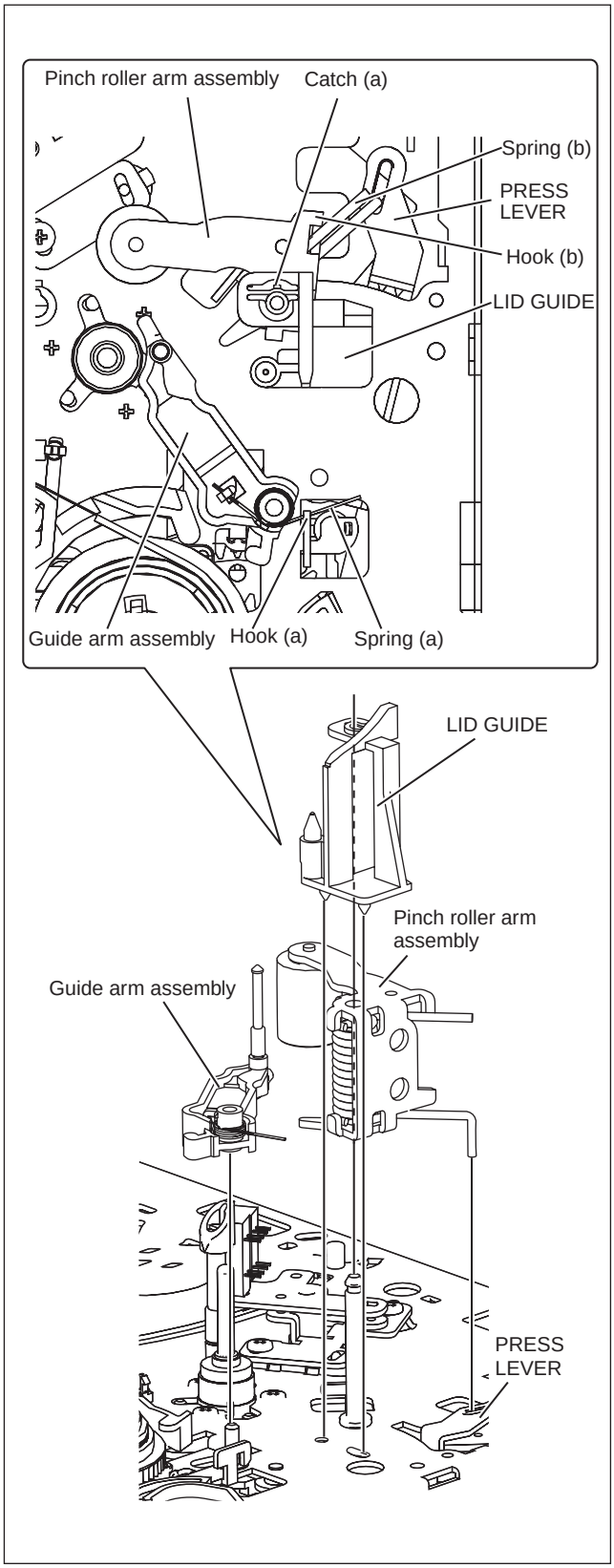


Fig.2-3-13

2.3.6.4 Idler arm, idler gear 1/2

2.3.6.4.1 Removal

(1) Release the catches (a) and (b) to detach the idler arm.
(2) Detach the idler gear 1/2.

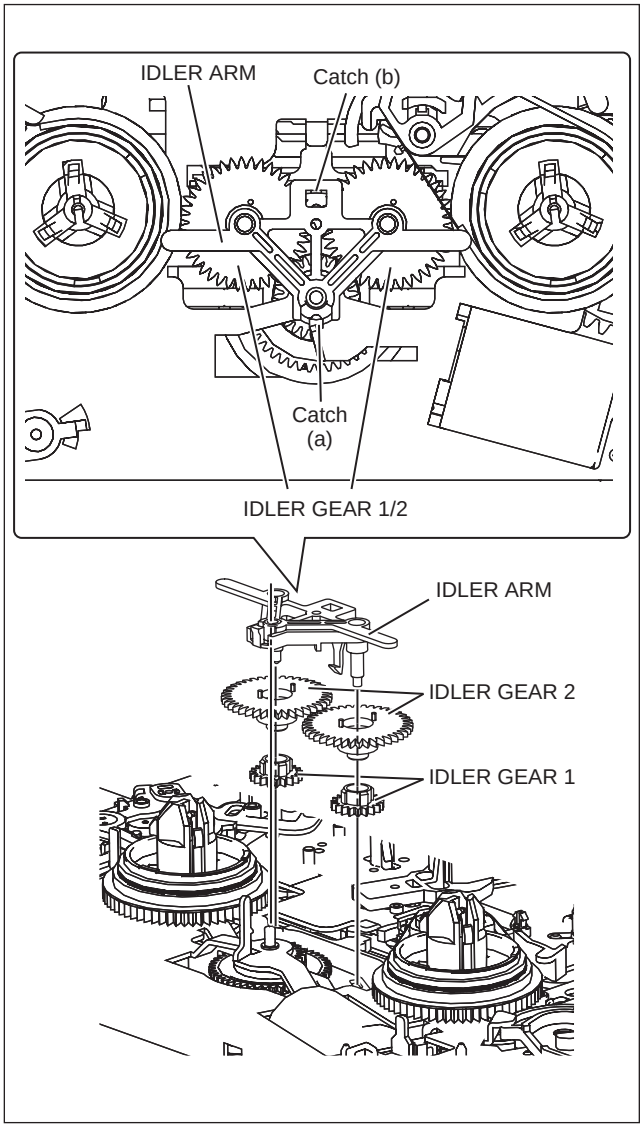


Fig.2-3-14

2.3.6.5 Main brake (T), brake lever, tension arm, reel disk (S/T), Rec safety lever

2.3.6.5.1 Removal

(1) Remove the spring (a). (Detach section (b) of the spring (a).)
(2) Release the catch (a) to detach the main brake (T).
(3) Release the catch (b) to detach the reel disk (T) and the spacer.
(4) Lift up and turn section (b) of the brake lever counterclockwise to remove the brake lever.
(5) Remove the spring (b) from the hook (a).
(6) Release the catch (c) to detach the tension arm.
(7) Release the catch (d) to detach the reel disk (S) and the spacer.
(8) Remove the spring (c) from the hook (b).
(9) Turn the tension arm base in the direction shown by arrow (a) to release catch (e). Place the projections of the tension arm base to the holes (a) to detach the tension arm base.
(10) While releasing the catch (f), turn the Rec safety lever counterclockwise to remove it.

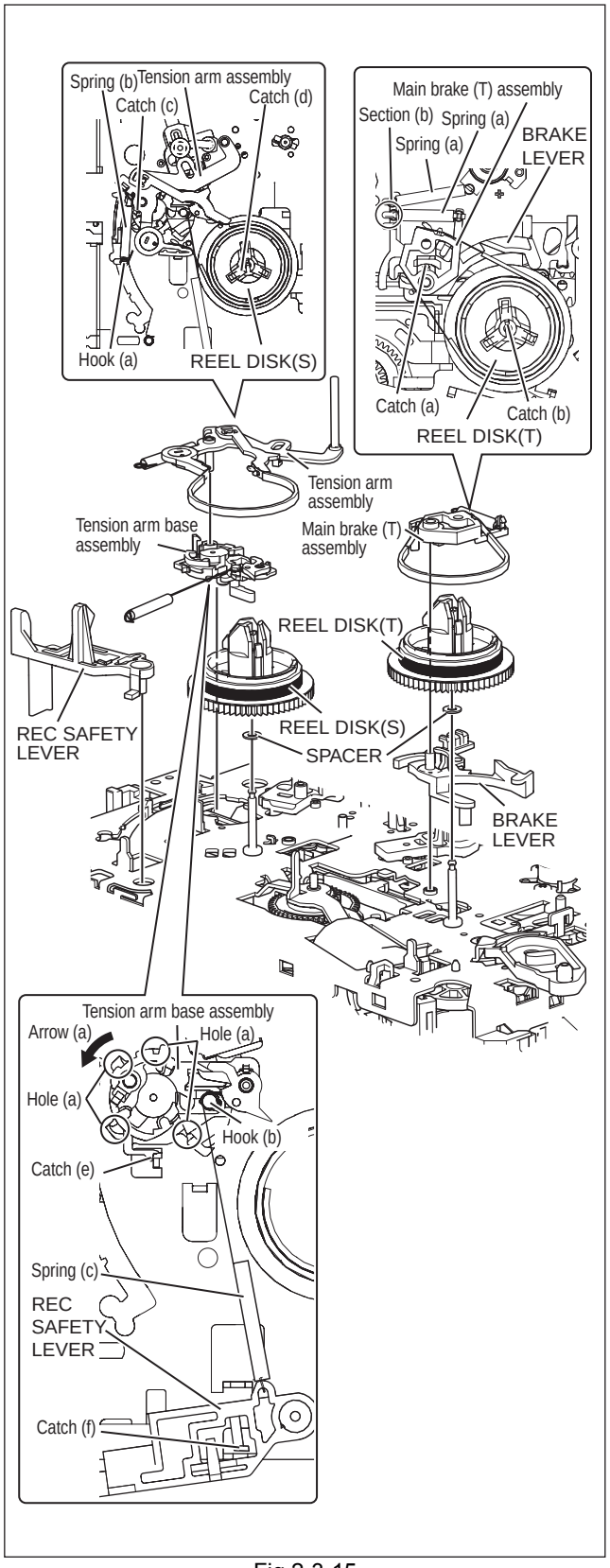


Fig.2-3-15

2.3.6.6 Press lever, control cam, capstan brake assembly, loading motor assembly

2.3.6.6.1 Removal

(1) Remove the slit washer (a) to detach the press lever.
(2) Release the slit washer (b) to detach the control cam.
(3) Release the catch (b) to detach the capstan brake assembly.
(4) Remove the solder (a).
(5) Remove the screw (a).
(6) Release the catches (c) and (d) to detach the loading motor assembly.

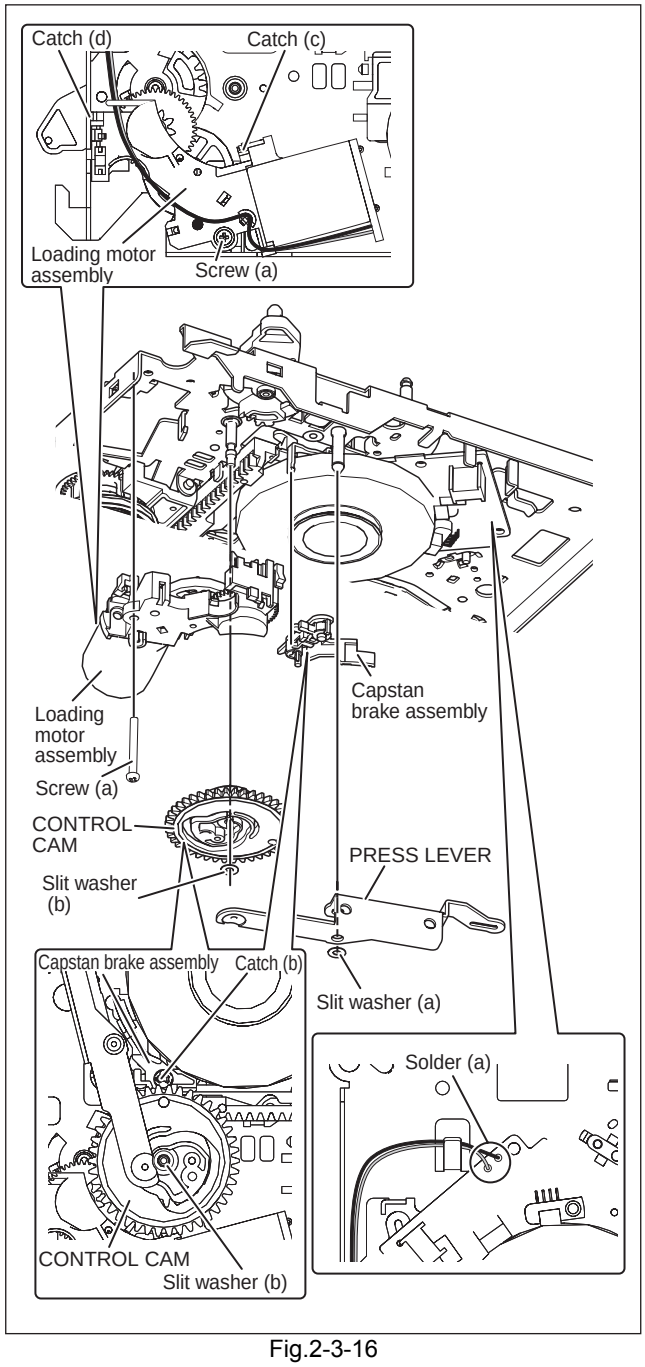


Fig.2-3-16

2.3.6.6.2 Installation (phase adjustment)

(1) Attach the loading motor assembly to the main deck.
(2) Secure the screw (a).
(3) Solder the wire to section (a).
(4) Arrange the wire along with the position guide (b).
(5) Attach the capstan brake assembly to the main deck.
(6) Place the main deck on the guide hole (a) of the control plate.
(7) Place the main deck on the guide hole (b) of the drive lever.
(8) Place the main deck no guide hole (c) of the control cam to install the control cam.
(9) Move the capstan brake in the direction shown by the arrow (a) to attach the press lever to the shaft (a). Make sure that the boss of the press lever fits in the control cam, and that the shaft (b) of the pinch roller arm assembly connects with the hole of the press lever.
(10) Attach slit washer (a) to shaft (a).

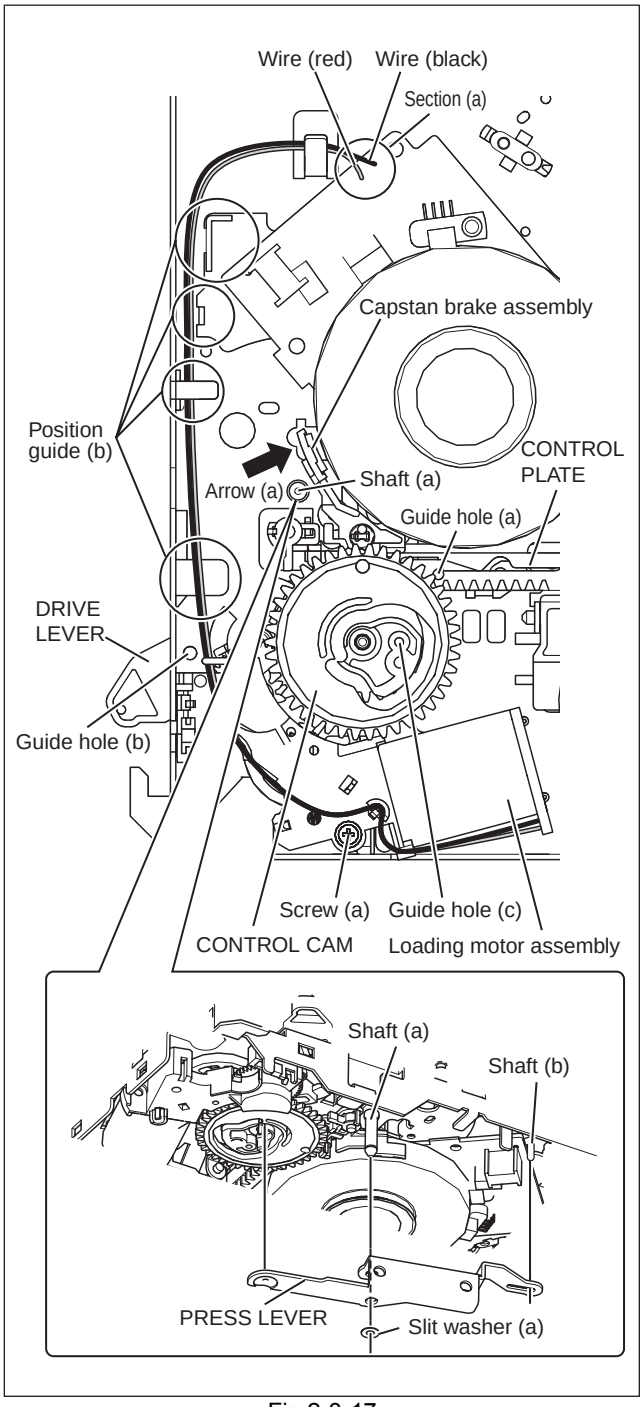


Fig.2-3-17

Note:

- When replacing the worm bearing of the loading motor assembly, attach it according to the following specification.
  If worm bearing is not attached correctly, a mechanism noise may occur. (See Fig. 2-3-18)

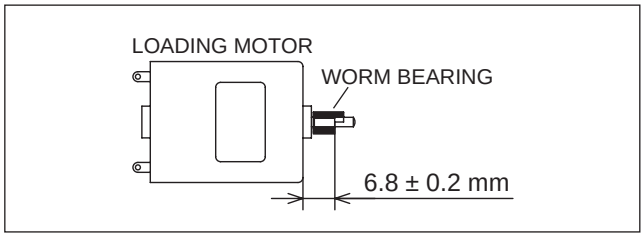


Fig.2-3-18

2.3.6.7 Capstan motor, load gear, control plate

2.3.6.7.1 Removal

(1) Detach the belt.
(2) Check that the FFC connector on the drum is disconnected.
(3) Release the catch (a) to remove the FFC wire.
(4) Remove the screws (a) to detach the capstan motor.
(5) Remove the screws (b) to detach the fixing plate.
(6) Release the catch (b) to detach the load gear.
(7) Turn the load gear (S/T) in the loading direction to detach it.
(8) Remove the control plate.

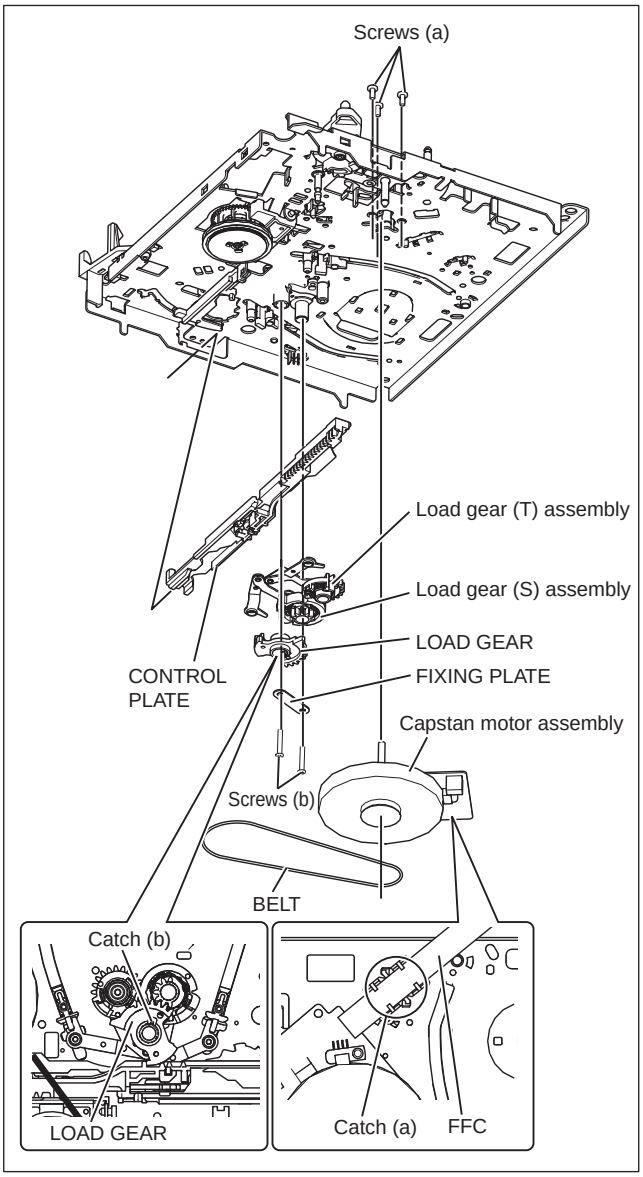


Fig.2-3-19

2.3.6.7.2 Installation (phase adjustment)

(1) Place the main deck on the guide hole (a) of the tension arm lever.
(2) Place the main deck on the guide hole (b) of the brake lever.
(3) Attach the control plate to align with the position guide (a).
(4) Place the hole (c) of the load arm (T) on the pole base (T) and the load gear (T) on the load gear base.
(5) Place the hole (d) of the load arm (S) on the pole base (S) and the load gear (S) on the load gear base. Be sure to align the guide mark (e) of the load gear (T) to that of the load gear (S).
(6) Turn the load gear (S/T) in the unloading direction to place the main deck on the guide hole (f) of the load gear (T).
(7) Place the main deck on the guide hole (g) of the control plate.
(8) Attach the load gear on the load gear base so that the control plate is placed on the edge (h) of the load gear.
(9) Place the fixing plate on the shaft of the load gear base and secure the screws (b).

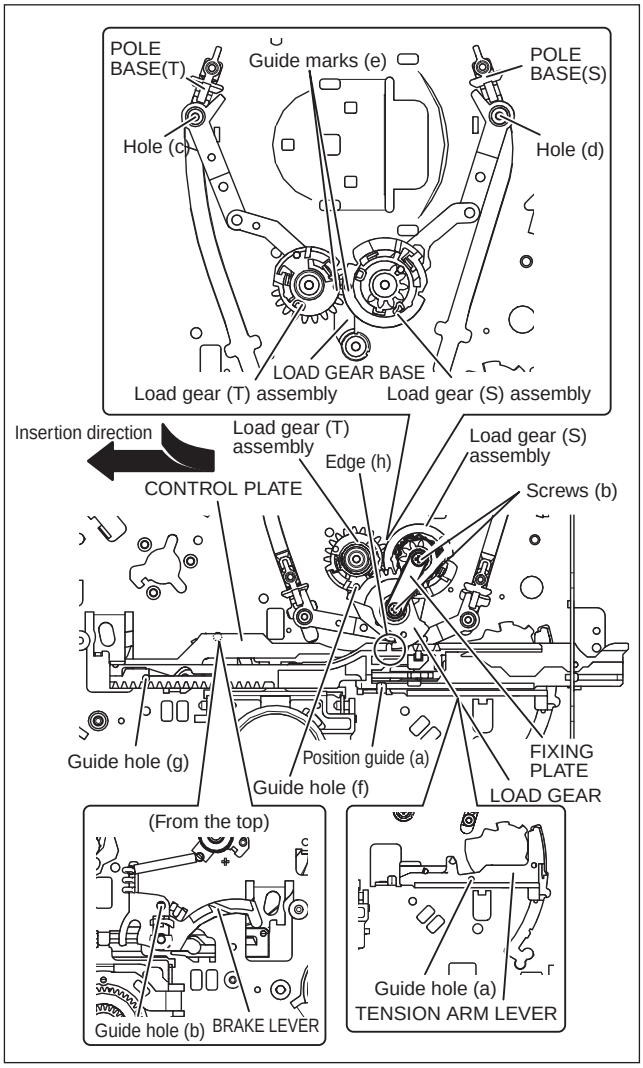


Fig.2-3-20

2.3.6.8 Clutch unit assembly, direct gear

2.3.6.8.1 Removal

(1) Remove the slit washer (a) to detach the clutch unit assembly.
(2) Remove the spring (a) and the direct gear.

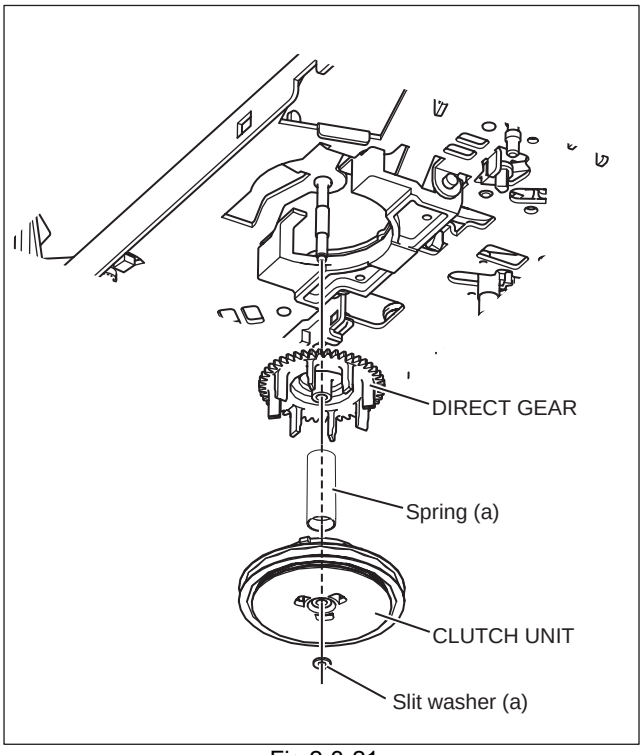
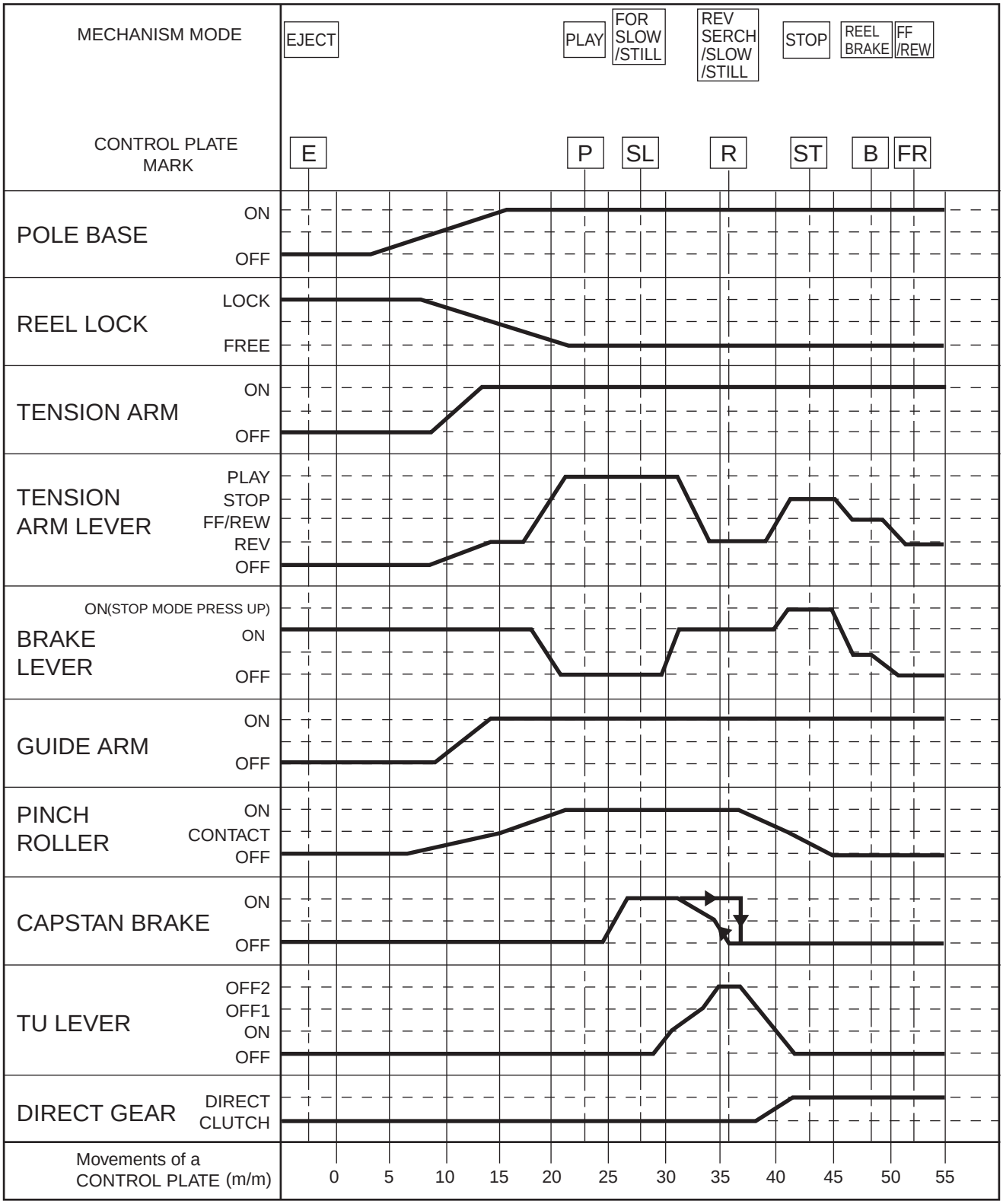


Fig.2-3-21

2.3.7 MECHANISM TIMING CHART



2.3.8 REMARKS

2.3.8.1 Cleaning

(1) For cleaning of the upper drum (particularly video heads), use fine-woven cotton cloth with alcohol soaks through. Do not move the cloth but turn the upper drum counterclockwise.

NOTE:
Make sure not to move the cloth in the vertical direction to the video head, since it may cause damage of the video heads.

(2) For cleaning of parts of the tape transport system except the upper drum, use fine-woven cotton cloth or cotton swab soaked alcohol.

(3) After cleaning, confirm that the cleaned parts are completely dry before loading the deck with cassette tape.

2.3.8.2 Applying oil and grease

(1) Periodical oiling and greasing are not required but should be done to new parts when replacing. If oil and grease on the other parts of the other party are old and dirty, wipe them clean and apply new oil or grease.

(2) For parts and points to apply oil and grease, refer to the exploded view of the 3.3 VHS MECHANISM ASSEMBLY. Fig.2-3-22 specifies oil and grease to be used.

(3) When oiling, clean the objective parts with alcohol first and apply one or two drop(s) of oil. Too much oiling causes rotary parts to slip because of oil leakage.

Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	COSMO-HV56	BB

specifies oil and grease to be used

Fig.2-3-22

JVC

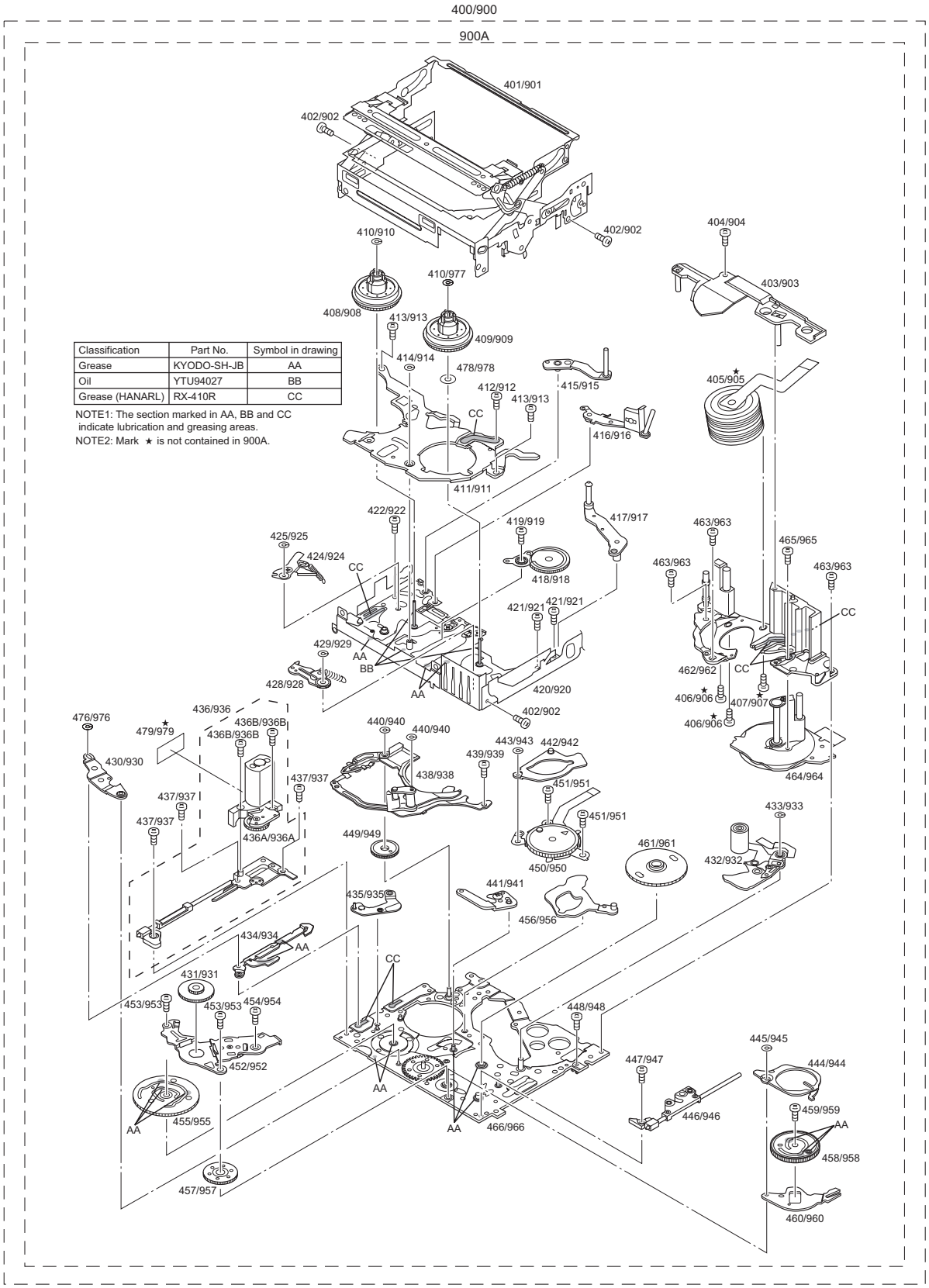
VICTOR COMPANY OF JAPAN, LIMITED
AV & MULTIMEDIA COMPANY CAMCORDER CATEGORY 12, 3-chome, Moriya-cho, kanagawa-ku, Yokohama, kanagawa-prefecture, 221-8528, Japan

(No.86700)

Printed in Japan
200304WPC

SECTION 3
PARTS LIST

3.1 DVC MECHANISM ASSEMBLY



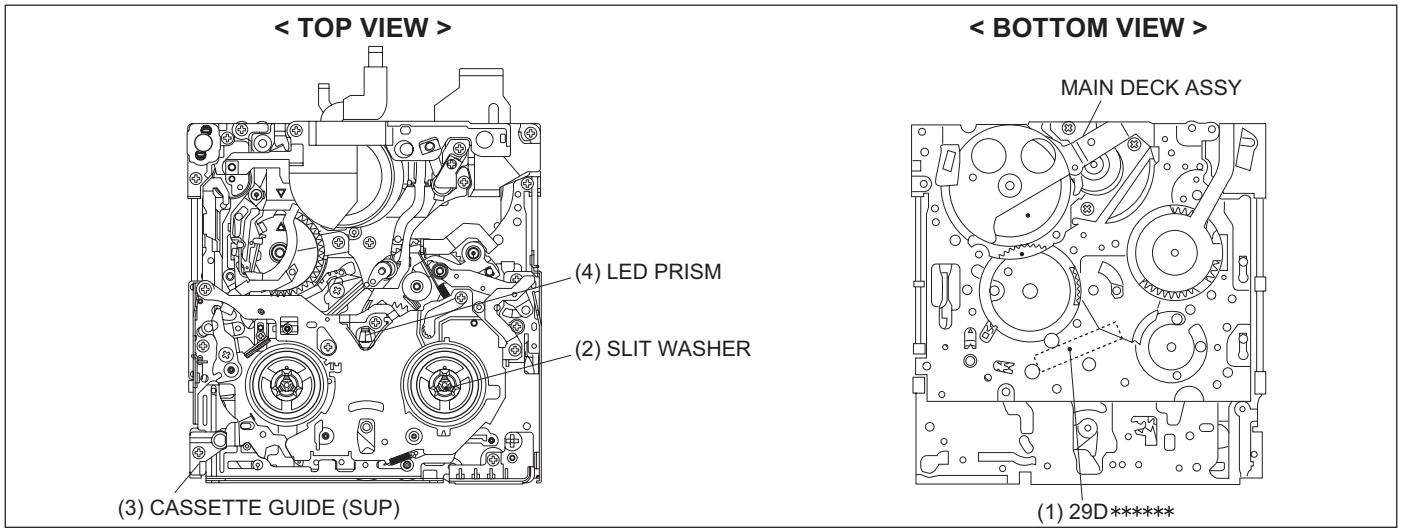
Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	YTU94027	BB
Grease (HANARL)	RX-410R	CC

NOTE1: The section marked in AA, BB and CC indicate lubrication and greasing areas.
NOTE2: Mark ★ is not contained in 900A.

Fig.3-1-1

3.1.1 DVC MECHANISM ASSEMBLY PART LIST

- Since parts numbers described here are the numbers at the time of manualissue, they are subject to change without notice. Therefore, be sure to see a parts list in the service manual of each model as for parts numbers.
- To distinguish the mechanism assembly with the symbol number of 400-499 from the mechanism assembly with the symbol number of 900-999, see the following procedures.
  (1) See the numbers on the backside of the MAIN DECK ASSY.
  For example, "29D******" is printed on the backside of the mechanism assembly with the symbol number of 900-999 (YMA0029D in this example). See the first three characters and numbers from the left.
  (2) See the color of the SLIT WASHER on the REEL DISK (TU).
  A red slit washer is used (the same color as a slit washer of CASSETTE GUIDE (SUP)) in the mechanism assembly with the symbol number of 400-499. A black slit washer is used in the mechanism assembly with the symbol number of 900-999.
  However, the black slit washer may be changed into a red one for the purpose of parts unification.
  (3) See the color of the CASSETTE GUIDE(SUP).
  Light-brown CASSETTE GUIDE(SUP) is used in the mechanism assembly with the symbol number of 400-499.
  Black CASSETTE GUIDE(SUP) is used in the mechanism assembly with the symbol number of 900-999.
  (4) See the shape of the LED PRISM. LED PRISM consists of only resin in the mechanism assembly with the symbol number of 400-499.
  Upper part of the LED PRISM is covered with black metal in the mechanism assembly with the symbol number of 900-999.



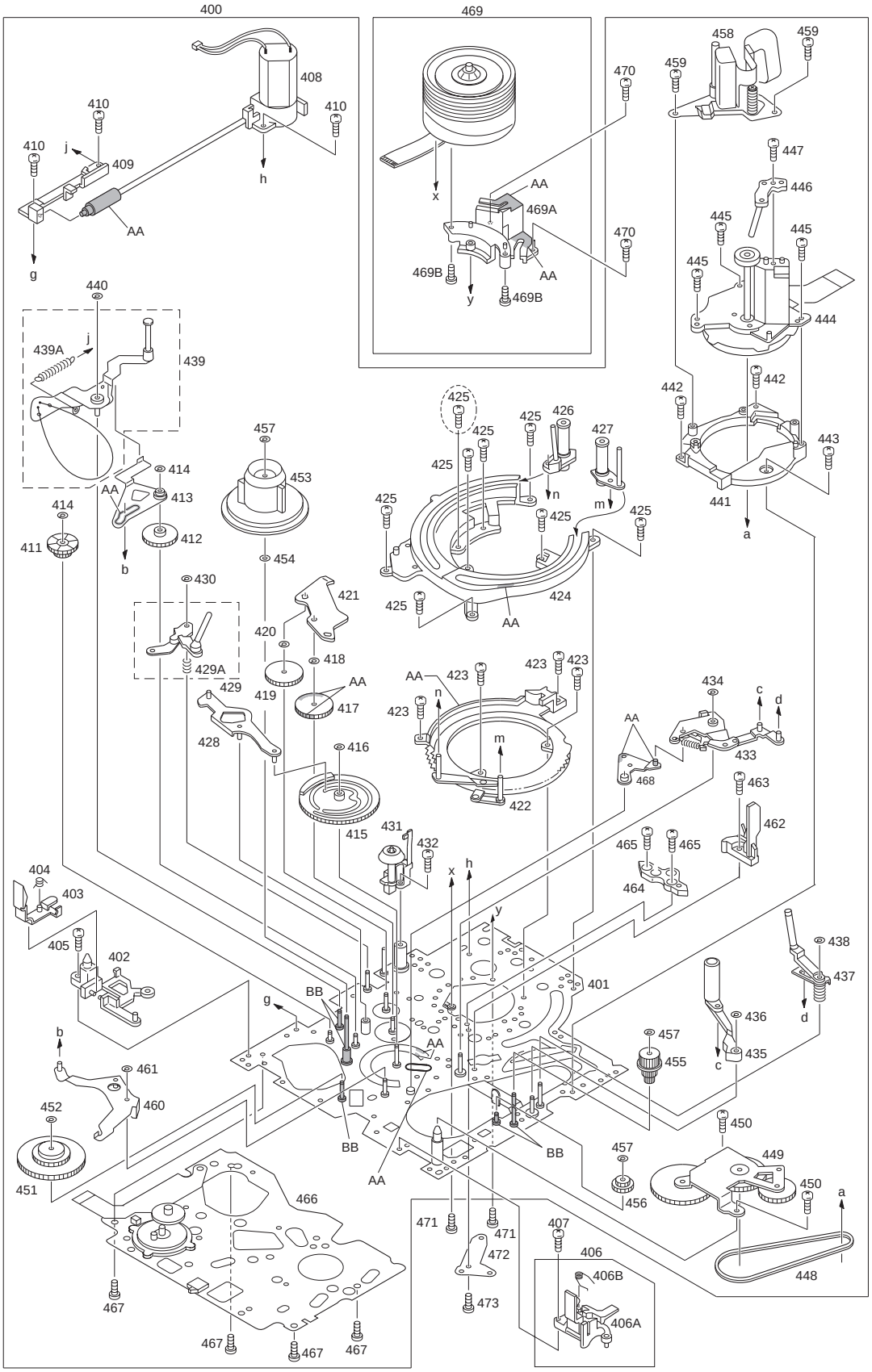
Part Name	Symbol No.	Part No.	Part No.	Part No.	Symbol No.	Part No.	Patr No.
MECHA(A) ASSY	400	YMA0029C	YMA0029M	YMA0029L	900	YMA0029H	YMA0029E
MECHA(A)ASSY	-	-	-	-	900A	YMA0029D	-
CASSETTE HOUSING ASSY	401	LY31543-002E*	LY31543-002H	←	901	LY32870-001G*	LY32870-001J
MINI SCREW,X3	402	YQ43893-8	←	←	902	←	←
UPPER BASE ASSY	403	LY31542-001J	←	←	903	LYH30420-001A	←
MINI SCREW	404	YQ43893*	QYSPSPU1425M	←	904	←	←
DRUM ASSY	405	**	**	**	905	**	**
DAMP.SCREW ASSY,X2	406	LY42820-001A	←	←	906	←	←
DAMP.SCREW ASSY	407	LY42820-002A	←	←	907	←	←
REEL DISK ASSY (SUP)	408	LY31538-001B*	LY31538-001F	←	908	←	←
REEL DISK ASSY (TU)	409	LY31538-002B*	LY31538-002H	LY31538-002G	909	LY31538-002H	←
SLIT WASHER,X2 or X1	410	YQ44246,(x2)	←,(x2)	←,(x2)	910	←*,(x1)	←,(x2)
REEL COVER ASSY	411	LY10217-001A*	LY10217-001F	←	911	LY10372-001D	←
MINI SCREW	412	LY42120-001A*	LY42120-002A	←	912	←	←
MINI SCREW,X2	413	LY41945-003A	←	←	913	←	←
SLIT WASHER	414	YQ44246	←	←	914	←	←
TENSION ARM ASSY	415	LY42025-001C	←	←	915	LY43725-001D	←
SLANT POLE ARM ASSY	416	LY31535-001F	←	←	916	LYH40269-001A	←
TU ARM ASSY	417	LY42031-001G*	LY42031-001K	←	917	LY43731-001F	←
SWING ARM ASSY	418	LY31531-001D	←	←	918	←	←
MINI SCREW	419	YQ43893	←	←	919	←	←
SLIDE DECK FINAL ASSY	420	LY20530-003B*	LY20530-003E	←	920	LYH30424-001A	←

Part Name	Symbol No.	Part No.	Part No.	Part No.	Symbol No.	Part No.	Patr No.
MINI SCREW,X2	421	YQ43893	←	←	921	←	←
MINI SCREW	422	LY43023-001A	←	←	922	←	←
PAD ARM ASSY	424	LY31533-001E	←	←	924	LYH30419-001A	←
SLIT WASHER	425	YQ44246	←	←	925	←	←
TU BRAKE ASSY	428	LY42016-001B	←	←	928	LYH40270-001A	←
SLIT WASHER	429	YQ44246	←	←	929	←	←
TENSION CONTROL LEVER ASSY	430	LY41959-001B	←	←	930	LY43684-001A	←
CENTER GEAR	431	LY31525-001B	←	←	931	LY32861-001A	←
PINCH ROLLER ARM FINAL ASSY	432	LY31516-001E	←	LY31516-001F	932	←	←
SLIT WASHER	433	YQ44246	←	←	933	←	←
TENSION CONTROL PLATE ASSY	434	LY41956-001C	←	←	934	LY43681-001A	←
BRAKE CONTROL LEVER ASSY	435	LY41962-001B*	LY41962-001C	←	935	LY43687-001A	←
MOTOR BRACKET ASSY	436	LY20525-002C	←	←	936	LYH30421-001A	←
LOADING MOTOR	436A	QAR0138-001	←	←	936A	←	←
TAPPING SCREW,x2	436B	LY41940-001A	←	←	936B	←	←
MINI SCREW,x3	437	YQ43893	←	←	937	←	←
GUIDE RAIL ASSY	438	LY20528-001R*	LY20528-001U	←	938	LYH30422-001A	←
MINI SCREW	439	YQ43893	←	←	939	←	←
SLIT WASHER,X2	440	YQ44246	←	←	940	←	←
SLIDE LEVER2 ASSY	441	LY31498-001C	←	LY31498-001D	941	LY32843-001A	←
LOADING PLATE ASSY	442	LY41965-001A	←	←	942	LY43690-001A	←
SLIT WASHER	443	YQ44246	←	←	943	←	←
EJECT LEVER	444	LY31522-001B	←	←	944	LY32858-001A	←
SLIT WASHER	445	YQ44246	←	←	945	←	←
BASE R ASSY	446	LY41929-001E*	LY41929-001F	←	946	LYH40271-001A	←
MINI SCREW	447	YQ43893	←	←	947	←	←
MINI SCREW	448	LY41945-001B	←	←	948	←	←
MODE GEAR	449	LY41930-001A	←	←	949	LY43665-001A	←
ROTARY ENCODER	450	QSW0876-003	←	←	950	←	←
MINI SCREW,X2	451	YQ43893	←	←	951	←	←
GEAR COVER ASSY	452	LY31524-001A	←	←	952	LY32860-001A	←
MINI SCREW,X2	453	YQ43893	←	←	953	←	←
MINI SCREW	454	YQ43893-4	←	←	954	←	←
MAIN CAM ASSY	455	LY41948-001C	←	←	955	LY43676-001A	←
SLIDE ARM ASSY	456	LY41941-001B	←	←	956	←	←
CONNECT GEAR 2	457	LY41951-001B	←	←	957	LY43678-001A	←
SUB CAM ASSY	458	LY41954-001B	←	LY41954-001E	958	←	←
MINI SCREW	459	LY42120-001A	←	←	959	←	←
CONTROL ARM ASSY	460	LY41952-001A	←	←	960	LY43692-001A	←
REEL GEAR 1	461	LY31523-001B	←	←	961	LY32859-001A	←
DRUM BASE ASSY	462	LY31508-002A*	LY31508-002B	LY33372-001A	962	LY31508-002B	←
SCREW,X3	463	QYSPSPU1425M	←	←	963	←	←
CAPSTAN MOTOR	464	QAR0142-001	←	←	964	←	←
MINI SCREW	465	YQ43893	←	←	965	←	←
MAIN DECK ASSY	466	LY10210-001D*	LY10210-001G	←	966	LY10367-001D*	LY10367-001E
SLIT WASHER	476	YQ44246	←	←	976	←	←
SLIT WASHER	477	-	-	-	977	YQ44246-6	-
WASHER	478	-	-	-	978	LY42047-005A	←
SPACER	479	-*	LY43987-001B	←	979	←	←

NOTE:

MARK ← is same as left.
MARK - is not used.
MARK * reference model was also changed.
MARK ** shows different parts number, depending on models.

3.2 VHS-C MECHANISM ASSEMBLY



Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	YTU94027	BB

NOTE: The section marked in **AA** and **BB** indicate lubrication and greasing areas.

Fig.3-2-1

3.2.1 VHS-C MECHANISM ASSEMBLY PARTS LIST

- Since parts numbers described here are the numbers at the time of manualissue, they are subject to change without notice. Therefore, be sure to see a parts list in the service manual of each model as for parts numbers.

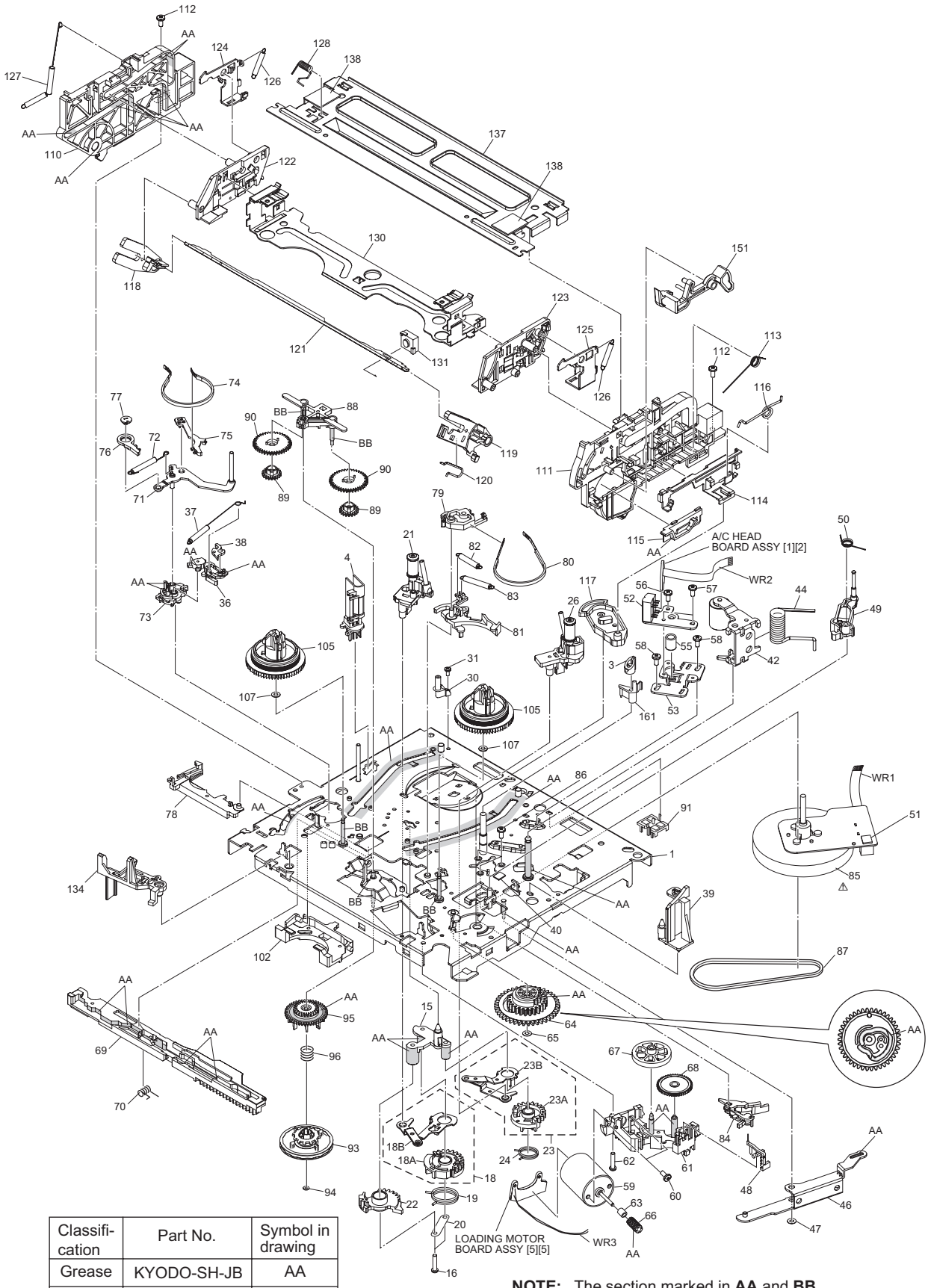
Part Name	Symbol No.	Part No.	Part No.	Part No.	Part No.	Part No.
MECHA(B) ASSY	400	YMA0033A-E	YMA0042A-E	YMA0034A-E	YMA0036A-E	YMA0040A-E
MAIN DECK ASSY	401	LY20612-001B	←	←	←	←
CASSETTE GUIDE (LEFT)	402	LY31817-001A	←	←	←	←
SW LEVER (LEFT)	403	LY31815-001A	←	←	←	←
TORSION SPRING	404	LY42581-001A	←	←	←	←
SCREW	405	LY42722-001A	←	←	←	←
CASSETTE GUIDE ASSY(RIGHT)	406	-	-	YQ44339A-7	←	←
SW.LEVER(RIGHT)	406A	-	-	YQ32162-1-3	←	←
TORSION SPRING	406B	-	-	YQ44340-1-4	←	←
SCREW	407	-	-	LY42819-001A	←	←
MOTOR BRACKET ASSY	408	LY31826-001A	←	←	←	←
WORM BRACKET	409	YQ20793	LY20951-001A	YQ20793	←	LY20951-001A
SCREW,X3	410	LY42722-001A	←	←	←	←
WHEEL GEAR	411	LY31925-001A	←	←	←	←
MIDDLE GEAR	412	LY42730-001A	←	←	←	←
CANCEL LEVER ASSY	413	LY42521-001A	←	←	←	←
SLIT WASHER,X2	414	LY42754-003A	←	←	←	←
CONTROL CAM	415	YQ20827-2-1	←	←	←	←
SLIT WASHER	416	PQM30017-25	←	←	←	←
LOADING GEAR(T)ASSY	417	LY42733-001A	←	←	←	←
SLIT WASHER	418	LY42754-003A	←	←	←	←
LOADING GEAR(S)ASSY	419	LY42732-001A	←	←	←	←
SLIT WASHER	420	LY42754-003A	←	←	←	←
COVER PLATE	421	LY42403-001A	←	←	←	←
LOADING RING ASSY	422	LY42452-001A	←	←	←	←
SCREW,X4	423	LY42728-001A	←	←	←	←
GUIDE RAIL	424	LY10239-001A	←	←	←	←
SCREW,X8 or X7	425	LY42728-001A,(X8)	←,(X7)	←,(X8)	←,(X8)	←,(X7)
POLE BASE(S)ASSY	426	LY30161-001B	←	←	←	←
POLE BASE(T)ASSY	427	LY30162-002A	←	←	←	←
DRIVE LEVER ASSY	428	LY42523-001A	←	←	←	←
SLANT ARM ASSY	429	LY42545-001B	LY44000-001B	LY42545-001B	←	LY44000-001B
TORSION SPRING(S)	429A	LY42547-001A	LY43992-001A	LY42547-001A	←	LY43992-001A
SLIT WASHER	430	LY42754-003A	←	←	←	←
ROLLER BASE ASSY	431	LY42739-003A	←	←	←	←
SCREW	432	LY42722-001A	←	←	←	←
LINK ARM ASSY	433	LY42494-001A	←	←	←	←
SLIT WASHER	434	PQM30017-25	←	←	←	←
PINCH ROLLER ARM ASSY	435	LY40018-002A	←	←	LY40018-005A	←
SLIT WASHER	436	PQM30017-25	←	←	←	←
TAKE UP GUIDE ARM ASSY	437	LY42541-001B	←	←	←	←
SLIT WASHER	438	LY42754-003A	←	←	←	←
TENSION ARM ASSY	439	LY42571-001A	←	←	←	←
TENSION SPRING	439A	LY42669-001A	←	←	←	←
SLIT WASHER	440	LY42754-003A	←	←	←	←
MOTOR BASE	441	YQ20797-1-5	←	←	←	←
SCREW,X2	442	LY42722-001A	←	←	←	←
SCREW	443	YQ44460	←	←	←	←
CAPSTAN MOTOR	444	QAR0212-001	QAR0212-002	QAR0212-001	QAR0212-002	←
TAPPING SCREW,X3	445	YQ44304	←	←	←	←
SLANT POLE BASE ASSY	446	LY42731-001A	←	←	←	←
TAPPING SCREW	447	YQ44304	←	←	←	←
TIMING BELT	448	YQ43710-2	←	←	←	←
CENTER PULLEY UNIT	449	LY42678-001A	←	←	←	LY42678-003A

Part Name	Symbol No.	Part No.	Part No.	Part No.	Part No.	Part No.
SCREW,X2	450	LY42722-002A	←	←	←	←
SUPPLY CLUTCH ASSY	451	LY42670-001A	←	←	←	←
SLIT WASHER	452	LY42754-003A	←	←	←	←
REEL DISC	453	YQ31861-1-7	←	←	←	←
WASHER	454	LY42755-001A	←	←	←	←
TAKE UP GEAR	455	LY31924-001A	←	←	←	←
BRAKE SUB GEAR	456	LY42738-001A	←	←	←	←
SLIT WASHER,X3	457	LY42754-003A	←	←	←	←
A/C HEAD UNIT	458	LY42544-001B	LY42544-002A	LY42544-001B	←	LY42544-002A
SCREW,X2	459	SPSN1750Z	←	←	←	←
EJECT LEVER ASSY	460	LY42517-001A	←	←	←	←
SLIT WASHER	461	LY42754-003A	←	←	←	←
LED GUIDE	462	YQ31833-1-1	←	←	←	←
SCREW	463	LY42722-001A	←	←	←	←
DRUM SPACER	464	LY42729-001A	←	←	←	←
SCREW,X2	465	LY42722-001A	←	←	←	←
ROTARY ENCODER	466	QSW0888-001	←	QSW0888-002	←	←
SCREW,X4	467	LY42722-002A	←	←	←	←
LINK LEVER	468	LY31814-001A	←	←	←	←
DRUM FINAL ASSY	469	**	**	**	**	**
CATCHER	469A	YDM1003-1-5	←	←	←	←
SCREW,X2	469B	QYSPSPU1735M	←	←	←	←
SCREW,X2	470	LY42722-001A	←	←	←	←
SCREW,X2	471	SPSH1740Z	←	←	←	←
BRUSH	472	LY43542-001A	←	←	←	←
SCREW	473	LY42722-003A	←	←	←	←
CASSETTE HOUSING FINAL ASSY	*155/481	LY31808-001C	LY31808-002C	LY31808-001C	LY31808-001D	LY31808-002C
SCREW,X4	*156/482	LY42722-003A	←	←	←	←
BRACKET(MECHA)	*161/484	LY32326-001A	←	←	←	←
SCREW,X2	*162/485	LY42722-003A	←	←	←	←
SIDE BRACKET L	*164/487	LY31807-001A	←	←	←	←
SCREW	*165/488	LY42722-003A	←	←	←	←

NOTE:

MARK ← is same as left.
MARK - is not used.
MARK * are shown in the parts list of FINAL ASSY of service manual of each model.
MARK ** shows different parts number, depending on models.

3.3 VHS MECHANISM ASSEMBLY



Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	COSMO-HV56	BB

NOTE: The section marked in **AA** and **BB** indicate lubrication and greasing areas.

Fig.3-3-1

3.3.1 VHS MECHANISM ASSEMBLY PARTS LIST

- Since parts numbers described here are the numbers at the time of manualissue, they are subject to change without notice. Therefore, be sure to see a parts list in the service manual of each model as for parts numbers.

System		VHS		S-VHS	
**Job No.		V15D Series	V16D Series	V15S Series	V16S Series
Part Name	Symbol No.	Part No.	Part No.	Part No.	Part No.
MAIN DECK ASSY	1	LP21039-001N	LP21039-001S	LP21039-001R	LP21039-001S
GUIDE POLE CAP	3	LP40097-002D	←	←	←
FULL ERASE HEAD	4	QAH0082-001	←	←	←
LOAD.GEAR BASE	15	LP30958-001B	←	←	←
SCREW,X2	16	QYTPST2620Z	←	←	←
LORD.GEAR(SUPPLY) ASSY	18	LP40798-001A	←	←	←
LORD.GEAR(SUPPLY)	18A	LP21040-001A	←	←	←
LORD.ARM(SUPPLY) ASSY	18B	LP40799-001A	←	←	←
TORSION SPRING(SUPPLY)	19	LP40837-001A	←	←	←
FIXING PLATE	20	LP40903-001A	←	←	←
POLE BASE ASSY(SUPPLY)	21	LP40806-001D	←	←	←
LOAD GEAR	22	LP30959-002A	←	←	←
LORD. GEAR(TAKE UP) ASSY	23	LP40802-001B	LP40802-001C	LP40802-001B	LP40802-001C
LORD. GEAR(TAKE UP)	23A	LP21041-001B	LP21041-001C	LP21041-001B	LP21041-001C
LORD.ARM(TAKE UP) ASSY	23B	LP40803-001A	←	←	←
TORSION SPRING(TAKE UP)	24	LP40838-001A	←	←	←
POLE BASE ASSY(TAKE UP)	26	LP40808-001F	LP40808-001E	←	←
ARM BASE	30	-	←	LP31020-004A	←
SCREW	31	-	←	QYTDST2606Z	-
TU LEVER	36	LP21055-001E	←	←	←
TENSION SPRING	37	LP40943-001A	←	←	←
T-UP HEAD	38	LP40859-001D	←	←	←
LID GUIDE	39	LP30961-001C	←	←	←
SPACER	40	LP30002-0B7A	←	←	-
PINCH ROLLER ARM ASSY	42	LP40810-001A	←	←	←
TORSION SPRING	44	LP40840-001C	LP40840-001D	←	←
PRESS LEVER	46	LP30963-001B	←	←	←
SLIT WASHER	47	PQM30017-24	←	←	←
S-SWITCH	48	-	←	LP40930-002E	←
GIDE ARM ASSY	49	LP40813-001D	←	←	←
TORSION SPRING	50	LP40841-001A	←	←	←
SPACER	51	LP30002-090A	←	←	-
A/C HEAD	52	QAH0081-001	←	←	←
HEAD BASE	53	LP30965-001A	←	←	←
COMPRESSION SPRING	55	LP40842-001A	LP40842-001D	LP40842-001A	LP40842-001D
SCREWX1 A/C HEAD	*56	QYTDST2006M	←	←	←
A/C HEAD SCREW,X2	*57	LP41036-001A	←	←	←
SCREW,X2 A/C HEAD	*58	QYTDST2606Z	←	←	←
LOADING MOTOR	59	QAR0023-001	←	←	←
SCREW,X2	60	QYTPSP3003Z	←	←	←
MOTOR BRACKET	61	LP21056-002F	LP21056-002G	←	←
TAP SCREW	62	QYTPST2620Z	←	←	←
WORM BEARING	63	LP40814-001B	←	←	←
CONTROL CAM	64	LP21044-001D	←	←	←
SLIT WASHER	65	PQM30017-24	←	←	←
WORM GEAR	66	LP40815-001A	←	←	←
HELICAL GEAR	67	LP40816-001B	←	←	←
CONNECT GEAR	68	LP40817-001A	←	←	←

System		VHS		S-VHS	
**Job No.		V15D Series	V16D Series	V15S Series	V16S Series
Part Name	Symbol No.	Part No.	Part No.	Part No.	Part No.
CONTROL PLATE	69	LP10400-001H	←	←	LP10400-001J
TORTION SPRING	70	LP40843-001A	←	←	←
TENSION ARM ASSY	71	LP40818-001B	←	←	←
TENSION SPRING	72	LP40844-001C	LP40844-001E	LP40844-001D	LP40844-001E
TENSION ARM BASE	73	LP21045-001D	←	←	←
TENSION BAND ASSY	74	LP40821-001A	←	←	←
BAND HOLDER-1	75	LP30967-001B	←	←	←
BAND HOLDER-2	76	LP30968-001C	←	←	←
ADJUST PIN	77	LP40822-002B	←	←	←
TENSION ARM LEVER	78	LP31000-005E	←	←	←
MAIN BRAKE(TAKE UP)	79	LP21046-001C	←	←	←
BAND BRAKE ASSY	80	LP40824-001A	←	←	←
BRAKE LEVER	81	LP30969-002A	LP30969-002B	LP30969-002A	LP30969-002B
TENSION SPRING	82	LP30003-033B	←	←	←
TENSION SPRING	83	LP30003-035B	←	←	←
CAPSTAN BRAKE ASSY	84	LP40825-001B	←	←	←
CAPSTAN MOTOR	85	QAR0204-002	←	←	←
SCREW,X3 CAPSTAN MOTOR	86	QYTPSG2606M	QYTPSG2606Z	QYTPSG2606M	QYTPSG2606Z
BELTCAPSTAN MOTOR	87	LP30005-010A	←	←	←
IDLER ARM	88	LP30970-001A	←	←	←
IDLER GEAR 1,X2	89	LP40828-004A	←	←	←
IDLER GEAR 2,X2	90	LP40829-001B	LP40829-002A	LP40829-001B	LP40829-002A
WIRE HOLDER	91	LP31014-001A	←	←	←
CLUTCH UNIT	93	LP40934-001B	←	←	←
SLIT WASHER	94	PQM30017-47	←	←	←
DIRECT GEAR	95	LP30973-001A	←	←	←
COMPRESS. SPRING	96	LP40939-001A	←	←	←
CHANGE LEVER	102	LP30974-001B	←	←	←
REEL DISK,X2	105	LP21049-001A	←	←	←
SPACER,X2	107	LP30017-004A	←	←	←
SIDE FRAME(L)	110	LP10401-001F	LP10401-001H	LP10401-001F	LP10401-001H
SIDE FRAME(R)	111	LP10402-001F	LP10402-001K	LP10402-001G	LP10402-001K
SCREW,X2	112	QYTDST2606Z	←	←	←
TORSION SPRING	113	LP40917-001C	LP40917-001D	←	←
SIDE PLATE	114	LP30976-001D	LP30976-001E	←	←
LIMIT PLATE	115	LP30977-002D	←	←	←
LIMIT SPRING	116	LP40846-001C	←	←	←
DRIVE LEVER	117	LP31100-001B	←	←	←
DRIVE ARM(L)	118	LP30978-001B	←	←	←
DRIVE ARM(R)	119	LP30979-001H	LP30979-001N	LP30979-001H	LP30979-001N
TORSION SPRING	120	LP40847-001B	←	←	←
CONNECT PLATE	121	LP30980-001A	LP30980-001E	LP30980-001B	LP30980-001E
SIDE HOLDER(L)	122	LP10403-001C	←	←	←
SIDE HOLDER(R)	123	LP10404-001D	LP10404-001E	←	←
LOCK LEVER(L)	124	LP30983-001A	LP30983-001B	LP30983-001A	LP30983-001B
LOCK LEVER(R)	125	LP30984-001A	LP30984-001B	LP30984-001A	LP30984-001B
TENSION SPRING,X2	126	LP40924-001C	LP40924-001D	←	←
EARTH SPRING(1)	127	LP40856-001A	←	LP40856-001B	LP40972-001A
EARTH SPRING(2)	128	LP40857-001B	←	←	←
C.HOLDER ASSY	130	LP30981-001E	LP30981-001G	LP30981-001F	LP30981-001G
C.H STOPPER	131	LP31135-001A	-	LP31135-001A	-

System		VHS		S-VHS	
**Job No.		V15D Series	V16D Series	V15S Series	V16S Series
Part Name	Symbol No.	Part No.	Part No.	Part No.	Part No.
R.SAFETY LEVER	134	LP21051-002C	←	←	←
TOP FRAME	137	LP21052-001F	LP21052-001J	LP21052-001H	LP21052-001J
SPACER	138	LP30002-0A7A	-	LP30002-0A7A	-
DOOR OPENER	151	LP30985-001G	←	←	←
TAPE GUIDE	161	-	LP40993-001A	-	LP40993-001A
E-CARD WIRE DRUM.M	WR1	WJT0059-001C	WJT0059-001E	WJT0059-001D	WJT0059-001E
E-CARD WIRE AC HEAD CN2001	WR2	WJT0067-001B	←	←	←
E-FL/RB WIRE LOADING MOTOR	WR3	WJS0022-001A	←	←	←
MEMO	-	PMD0035B-C	PMD0040A-C	PMD0036B-C /PMD0039A-C	PMD0037A-C /PMD0041A-C

NOTE:

MARK ← is same as left.
MARK - is not used.
MARK * shows that Symbol No. and Parts No. may sometimes be different from those in each manual. See the table below for final Symbol No. and Parts No.
MARK ** is Job No.
To identify a model, see the Job No. of the model.
Job No. is shown just above the service manual number at the lower right of the service manual of each model.

SECTION 3
ADJUSTMENT

3.1 Before adjustment

3.1.1 Precaution

- ***The adjustments of this unit include the mechanism compatibility and electrical adjustments. During the performance of this work, be sure to observe the precautions for each type of adjustment.***
- ***If there is a reference to a signal input method in the signal column of the adjustment chart, "Ext. S-input" means the Y/C separated video signal and "Ext. input" means the composite video signal input.***
- ***Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.***

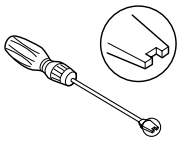
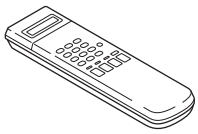
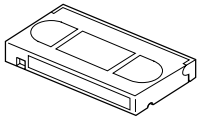
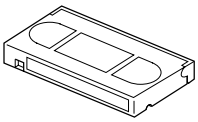
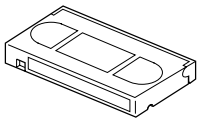
3.1.2 Required test equipments

- Color (colour) television or monitor
- Oscilloscope: wide-band, dual-trace, triggered delayed sweep
- Signal generator: RF / IF sweep / marker
- Signal generator: stairstep, color (colour) bar [PAL/NTSC]
- Recording tape
- Digit-key remote controller(provided)

3.1.3 Required adjustment tools

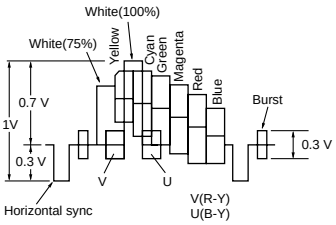
○ : Used – : Not used

	Mechanism compatibility adjustment	Electrical adjustment
Roller driver	○	–
Jig RCU	–	○
Back tension cassette gauge	○	–
Alignment tape(MHPE)	○	–
Alignment tape(MHPE-L)	○	○

Roller driver PTU94002	Jig RCU PTU94023B	Back tension cassette gauge PUJ48076-2
		
Alignment tape (SP, stairstep, PAL) MHPE	Alignment tape (LP, stairstep, PAL) MHPE-L	
		

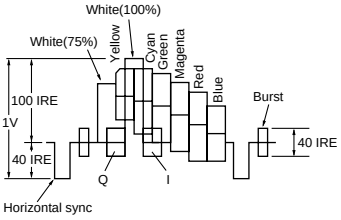
3.1.4 Color (colour) bar signal, color (colour) bar pattern

• Color(colour) bar signal [PAL]

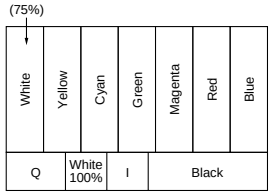


• Color(colour) bar pattern [PAL]

• Color(colour) bar signal [NTSC]



• Color(colour) bar pattern [NTSC]



3.1.5 Switch settings

When adjusting this unit, set the VCR mode and switches as described below.

- When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). (See "section 1 disassembly".)

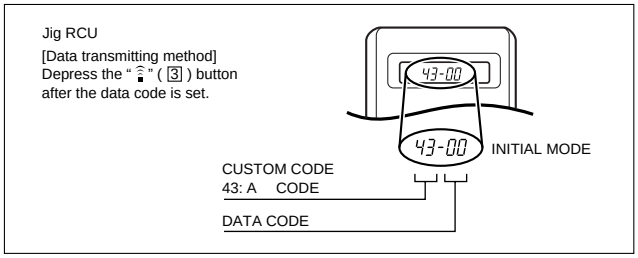


Fig. 3-1-5a Jig RCU [PTU94023B]

- Set the switches as shown below unless otherwise specified on the relevant adjustment chart. The switches that are not listed below can be set as desired.
  If the VCR is not equipped with the functions detailed below, setup is not required.

AUTO PICTURE/VIDEO CALIBRATION/ B.E.S.T./D.S.P.C.	OFF
PICTURE CONTROL/SMART PICTURE	NORMAL/NATURAL
VIDEO STABILIZER	OFF
TBC	ON
Digital 3R	ON
VIDEO NAVIGATION/TAPE MANAGER	OFF
BLUE BACK	OFF

3.1.6 Manual tracking mode (Auto tracking ON/OFF) setting

(1) In order to set to the manual tracking mode during tape playback, press the “SP/EP(LP)” button on the remote control unit.
  • Each press of the button switches the auto tracking ON or OFF.
  • When the auto tracking is OFF, the monitor screen displays “AT: OFF”.
  • When the manual tracking mode is set, the tracking is placed at the center position.
(2) Press “channel +/-” to adjust the tracking manually.

3.2 Mechanism compatibility adjustment

Notes:
- ***Although compatibility adjustment is very important, it is not necessary to perform this as part of the normal servicing work. It will be required when you have replaced the A/C head, drum assembly or any part of the tape transport system.***
- ***To prevent damaging the alignment tape in the compatibility adjustment, prepare a cassette tape (for self-recording/playback), perform a test on it by transporting it and making sure that the tape is not bent by the tape transport mechanisms such as in the guide rollers.(See Fig.3-2-2a.)***

3.2.1 Tension pole position

Notes:
- ***This adjustment must be performed every time the tension band is replaced.***

Signal	(A)	• Back tension cassette gauge [PUJ48076-2]
Mode	(B1)	• PB
	(B2)	• Eject end
Adjustment part	(F)	• Adjust pin [Mechansim assembly]
Specified value	(G)	• 25 - 51 gf•cm (2.45 – 5 × 10^{-3} Nm)

(1) Play back the back tension cassette gauge (A).
(2) Check that the indicated value on the left side gauge is within the specified value (G).
(3) If the indicated value is not within the specified value (G), perform the adjustment in a following procedure.(See Fig.3-2-1a.)
  1) Remove the top frame, cassette holder and side frames (L/R) all together. (See “section 2 mecha-nism”.)
  2) Rotate the loading motor gear to move the control plate so that the triangular stamping to the left of the “P” stamping is aligned with the stamping (a) on the main deck. This positioning is mode (B1).
  3) Adjust by turning the adjustment pin so that the tip of the tension arm is aligned with the stamping (b) on the main deck.
  4) Rotate the reel disk (S) by about one turn clockwise and make sure that the round hole of the adjustment pin is located in the “OK” range.
  If it is outside this range, restart the adjustment from the beginning.
  After completion of the adjustment, rotate the loading gear motor to return it to the mode (B2) position.

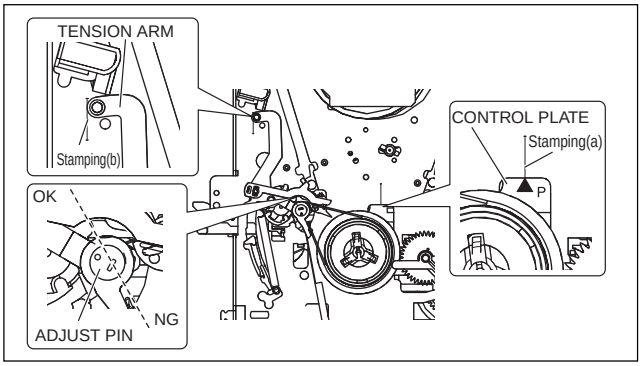


Fig. 3-2-1a

3.2.2 FM waveform linearity

Signal	(A1) (A2)	• Alignment tape(SP, stairstep, PAL) [MHPE] • Alignment tape(LP, stairstep, PAL) [MHPE-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Guide roller [Mechanism assembly]
Specified value	(G)	• Flat V.PB FM waveform
Adjustment tool	(H)	• Roller driver [PTU94002]

(1) Play back the alignment tape (A1).
(2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
(3) Set the VCR to the manual tracking mode.
(4) Make sure that there is no significant level drop of the V.PB FM waveform caused by the tracking operation, with its generally parallel and linear variation ensured. Perform the following adjustments when required. (See Fig. 3-2-2b.)
(5) Reduce the V.PB FM waveform by the tracking operation. If a drop in level is found on the left side, turn the guide roller of the pole base assembly (supply side) with the roller driver to make the V.PB FM waveform linear.
If a drop in level is on the right side, likewise turn the guide roller of the pole base assembly (take-up side) with the roller driver to make it linear. (See Fig. 3-2-2b.)
(6) Make sure that the V.PB FM waveform varies in parallel and linearly with the tracking operation again. When required, perform fine-adjustment of the guide roller of the pole base assembly (supply or take-up side).
(7) Unload the cassette tape once, play back the alignment tape (A1) again and confirm the V.PB FM waveform.
(8) After adjustment, confirm that the tape wrinkling does not occur at the roller upper or lower limits. (See Fig. 3-2-2a.)

[Perform adjustment step (9) only for the models equipped with SP mode and EP (or LP) mode.]

(9) Repeat steps (1) to (8) by using the alignment tape (A2).

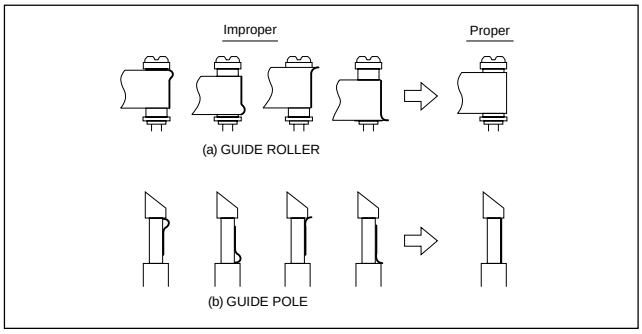


Fig. 3-2-2a

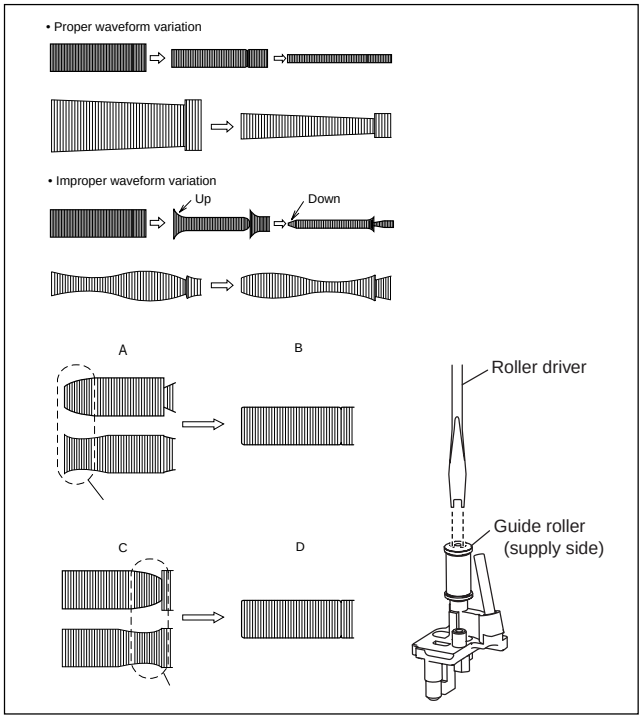


Fig. 3-2-2b

3.2.3 Height and tilt of the A/C head

Note:

• Set a temporary level of the height of the A/C head in advance to make the adjustment easier after the A/C head has been replaced. (See "section 2 mechanism".)

Signal	(A)	• Alignment tape(SP, stairstep, PAL) [MHPE]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• AUDIO OUT terminal • TP4001 (CTL. P)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• A/C head [Mechanism assembly]
Specified value	(G)	• Maximum waveform

(1) Play back the alignment tape (A).
(2) Apply the external trigger signal to D.FF (E), to observe the AUDIO OUT waveform and Control pulse waveform at the measuring points (D1) and (D2) in the ALT mode.
(3) Set the VCR to the manual tracking mode.
(4) Adjust the AUDIO OUT waveform and Control pulse waveform by turning the screws (1), (2) and (3) little by little until both waveforms reach maximum. The screw (1) and (3) are for adjustment of tilt and the screw (2) for azimuth.

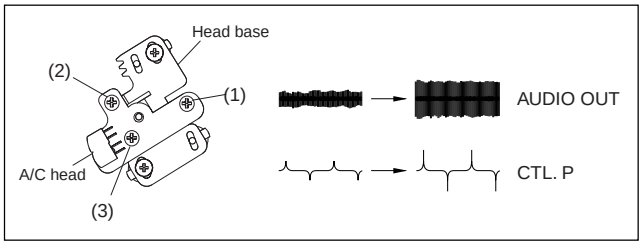


Fig. 3-2-3a

3.2.4 A/C head phase (X-value)

Signal	(A1) (A2)	• Alignment tape(SP, stairstep, PAL) [MHPE] • Alignment tape(EP, stairstep, PAL) [MHPE-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• A/C head base [Mechanism assembly]
Specified value	(G)	• Maximum V.PB FM waveform
Adjustment tool	(H)	• Roller driver [PTU94002]

(1) Play back the alignment tape (A1).
(2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
(3) Set the VCR to the manual tracking mode.
(4) Loosen the screws (4) and (5), then set the Roller driver to the innermost projected part of the A/C head. (See Fig. 3-2-4a.)
(5) Rotate the roller driver so that the A/C head comes closest to the capstan. From there, move the A/C head back gradually toward the drum until the point where the FM waveform is maximized for the second time, and then tighten the screws (4) and (5) temporarily.
(6) Play an alignment tape (A2) and set to the manual-tracking mode.
(7) Fine-adjust A/C head base position to maximize the FM waveform, and then tighten the screws (4) and (5) firmly.
(8) Play alignment tapes (A1) and (A2) and confirm that the FM waveforms are maximized when the tracking is at the center position.

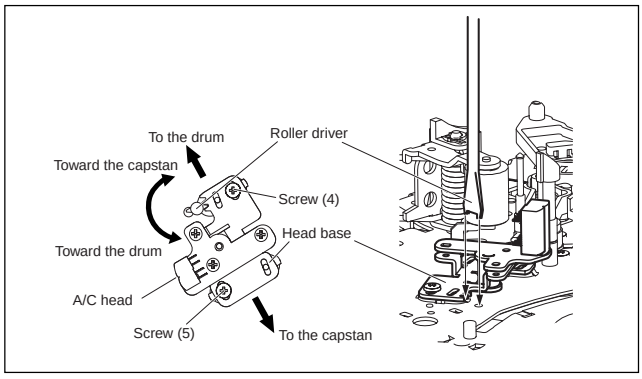


Fig. 3-2-4a

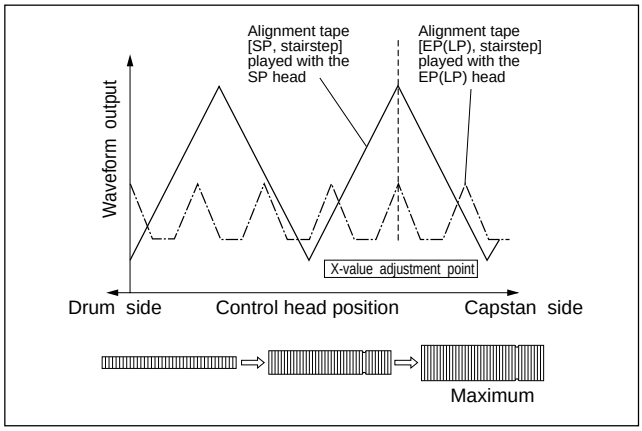


Fig. 3-2-4b

3.3 Electrical adjustment

Note:
The following adjustment procedures are not only necessary after replacement of consumable mechanical parts or board assemblies, but are also provided as references to be referred to when servicing the electrical circuitry.
In case of trouble with the electrical circuitry, always begin a service by identifying the defective points by using the measuring instruments as described in the following electrical adjustment procedures. After this, proceed to the repair, replacement and/or adjustment. If the required measuring instruments are not available in the field, do not change the adjustment parts (variable resistor, etc.) carelessly.

3.3.1 Servo circuit

3.3.1.1 Switching point

Signal	(A1) (A2)	• Stairstep signal • Alignment tape (LP,stairstep,PAL) [MHPE-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• VIDEO OUT terminal (75Ω terminated) • TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Jig RCU: Code “5A”
Specified value	(G)	• 6.5 ± 0.5H
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Play back the signal (A1) of the alignment tape (A2).
(2) Apply the external trigger signal to D.FF (E) to observe the VIDEO OUT waveform and V.PB FM waveform at the measuring points (D1) and (D2).
(3) Set the VCR to the manual tracking mode.
(4) Adjust tracking so that the V.PB FM waveform becomes maximum.
(5) Set the VCR to the Auto adjust mode by transmitting the code (F) from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed.
(6) If the VCR enters the eject mode, repeat steps (1) to (5) again.
(7) Play back the alignment tape (A2) again, confirm that the switching point is the specified value (G).

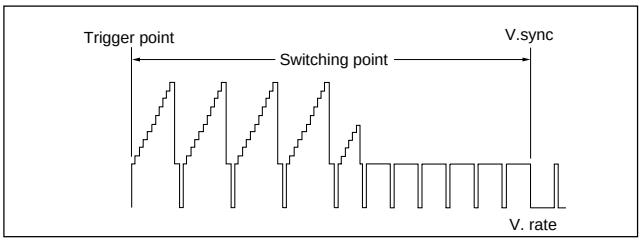


Fig. 3-3-1-1a Switching point

3.3.1.2 Slow tracking preset

Signal	(A1) (A2) (A3)	• Ext. input • Color (colour) bar signal [PAL] • Color (colour) bar signal [NTSC]
Mode	(B1) (B2) (B3) (B4)	• VHS SP • VHS LP (PAL) • VHS SP • VHS EP (NTSC)
Measuring point	(D)	• TV-Monitor
Adjustment part	(F)	• Jig RCU: Code “71“ or “72”
Specified value	(G)	• minimum noise
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Record the signal (A2) in the mode (B1), and play back the recorded signal.
(2) Set the VCR to the manual tracking mode.
(3) Set the VCR to the FWD slow (+1/6x) mode.
(4) Transmit the code (F) from the Jig RCU to adjust so that the noise bar becomes the specified value (G) on the TV monitor in the slow mode.
(5) Set the VCR to the Stop mode.
(6) Confirm that the noise bar is (G) on the TV monitor in the slow mode.
(7) Repeat steps (3) to (6) in the REV slow (–1/6x) mode.
(8) Repeat steps (1) to (7) in the mode (B2).
(9) Record the signal (A3) in the mode (B3), and play back the recorded signal.
(10) Repeat steps (2) to (7)
(11) Repeat steps (9) and (10) in the mode (B4).

Note:
- ***For FWD slow (+1/6x) playback, transmit the code “08” from the Jig RCU to enter the slow playback mode, and transmit the code “D0” for REV slow (–1/6x) mode.***

3.3.2 Syscon circuit

Note:
- ***When perform this adjustment, remove the Mechanism assembly.***

3.3.2.1 Timer clock

Signal	(A)	• No signal
Mode	(B)	• EE
Equipment	(C)	• Frequency counter
Measuring point Short point	(D1) (D2) (D3)	• IC3001 pin 44 • IC3001 pin 103 • C3054 + and –
Adjustment part	(F)	• C3025 (TIMER CLOCK)
Specified value	(G)	• 1024.008 ± 0.001 Hz (976.5549 ± 0.0010 µsec)

(1) Connect the frequency counter to the measuring point (D1).
(2) Connect the short wire between the short point (D2) and Vcc (5V).
(3) Short the leads of capacitor (D3) once in order to reset the microprocessor of the SYSCON.
(4) Disconnect the short wire between the short point (D2) and Vcc then connect it again.
(5) Adjust the Adjustment part (F) so that the output frequency becomes the specified value (G).

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

1) All resistance values are in ohm. 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in μF, (P: PF).
3) All inductance values are in μH, (m: mH).
4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

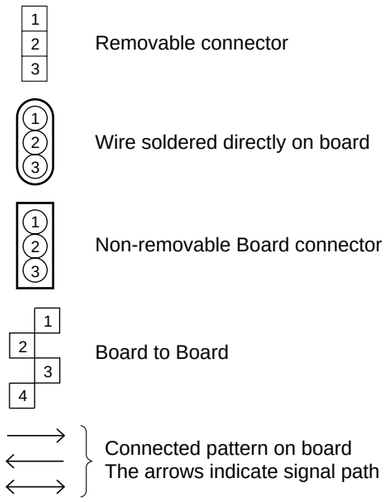
Note: The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

2. Indications of control voltage

AUX : Active at high.

$\overline{AUX}$ or AUX(L) : Active at low.

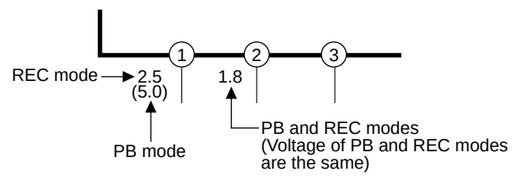
3. Interpreting Connector indications



Note: For the destination of each signal and further line connections that are cut off from the diagram, refer to "BOARD INTERCONNECTIONS"

4. Voltage measurement

1) Regulator (DC/DC CONV) circuits
   REC : Colour bar signal.
   PB : Alignment tape (Colour bar).
   — : Unmeasurable or unnecessary to measure.
2) Indication on schematic diagram
   Voltage Indications for REC and PB mode on the schematic diagram are as shown below.



Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Signal path Symbols

The arrows indicate the signal path as follows.

NOTE : The arrow is DVC unique object.

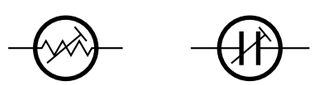
- Playback signal path
- Playback and recording signal path
- Recording signal path (including E-E signal path)
- Capstan servo path
- Drum servo path

(Example)

- R-Y — Playback R-Y signal path
- Y — Recording Y signal path

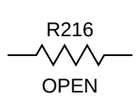
6. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



7. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.



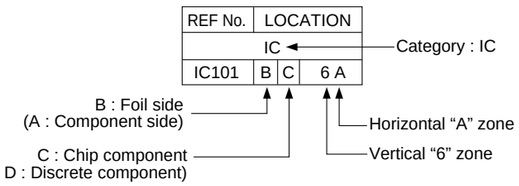
CIRCUIT BOARD NOTES

1. Foil and Component sides

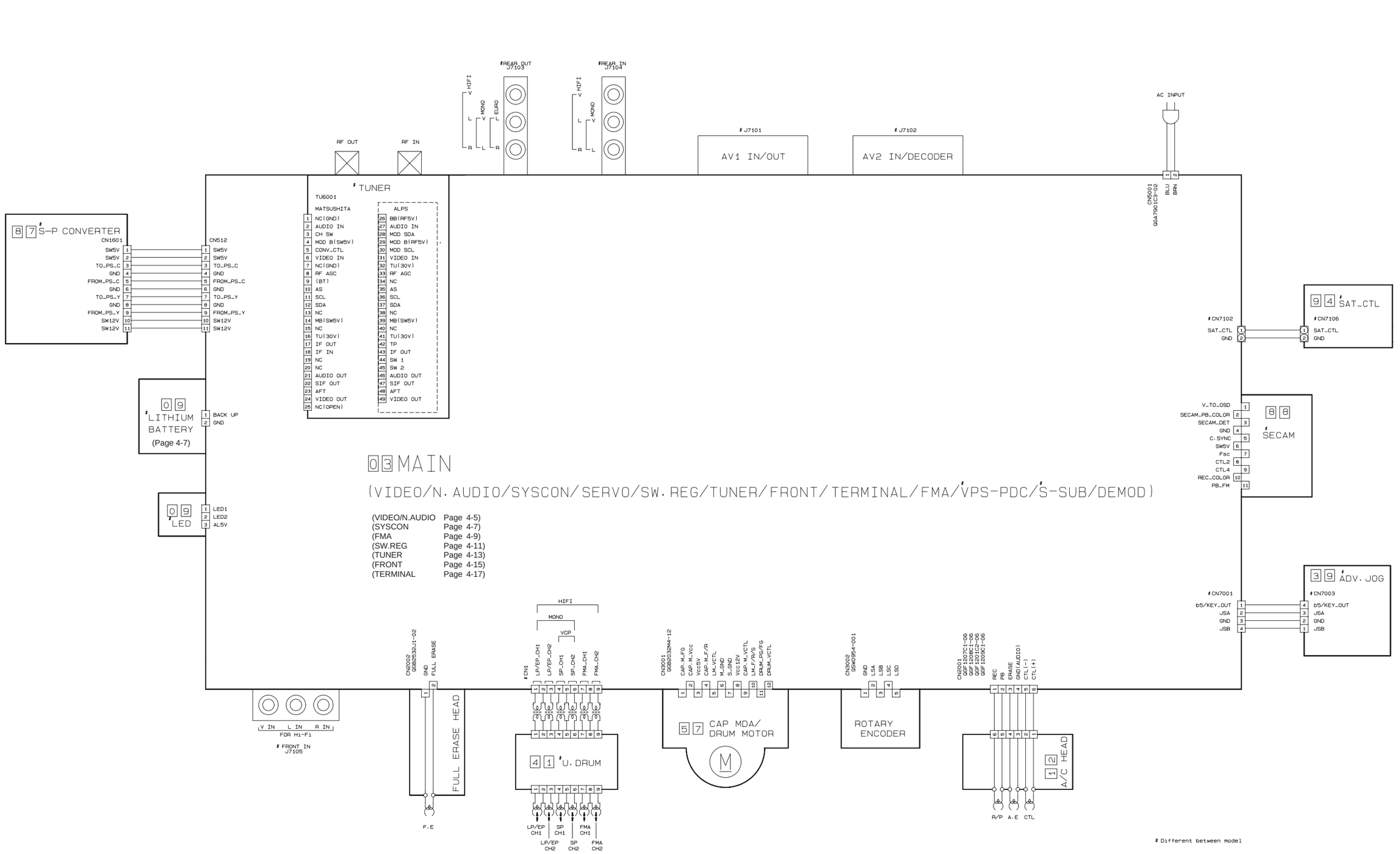
1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

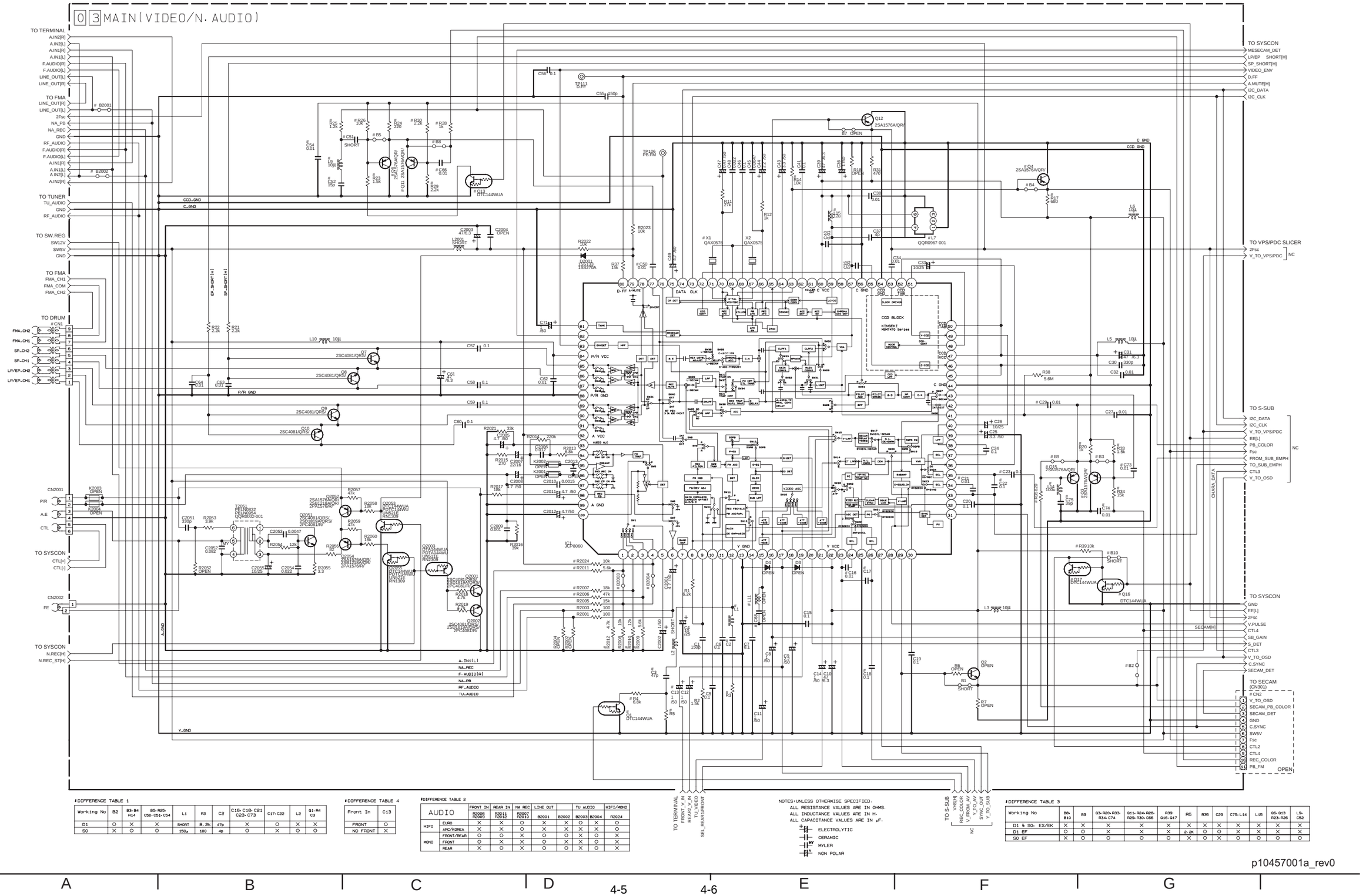
Parts location are indicated by guide scale on the circuit board.



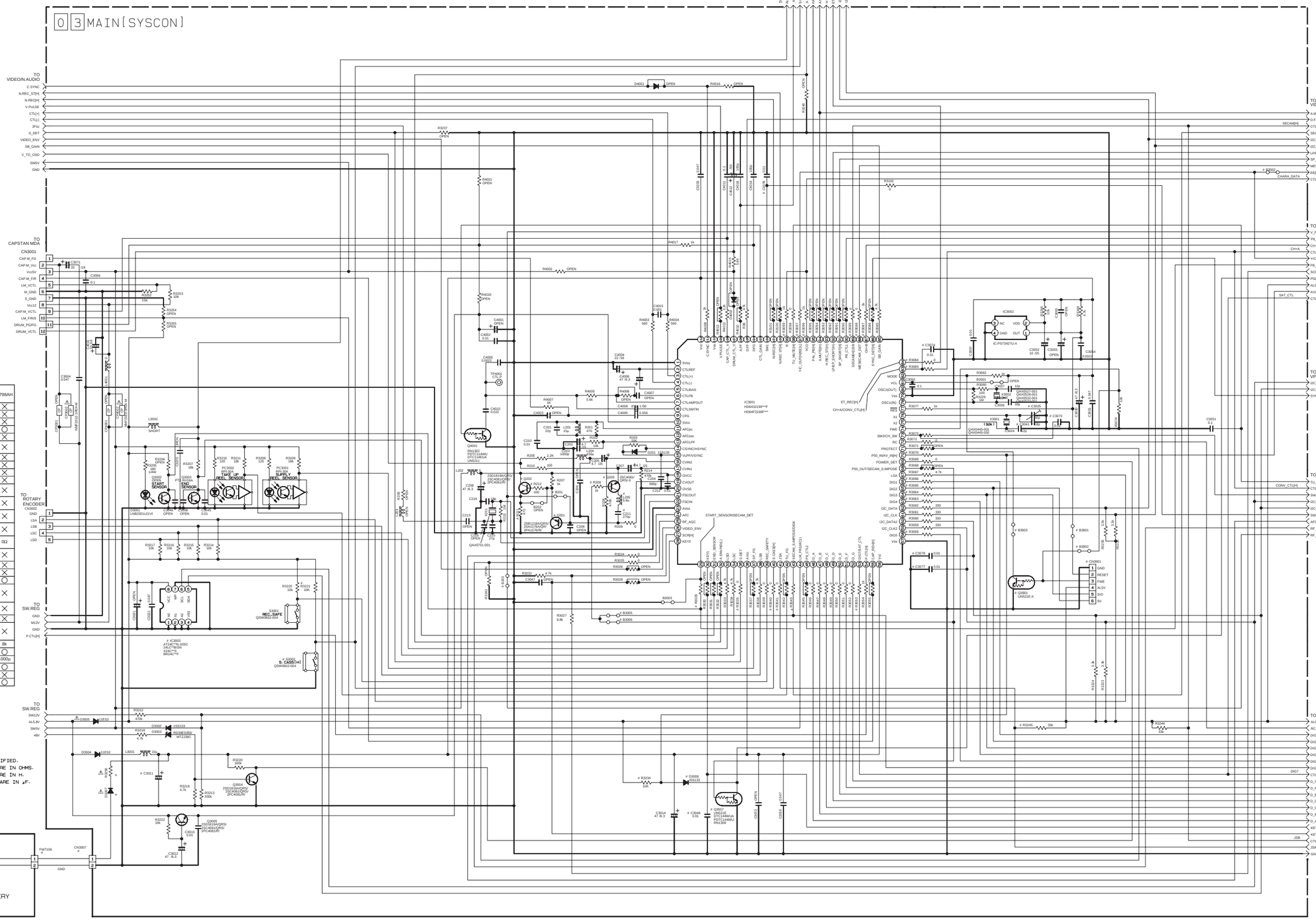
Note: For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).


#REAR OUT J7103
#REAR IN J7104
HIFI
MONO
EURO
AC INPUT
CN5001 GGA7901C3-02
BLU
BRN
#J7101
AV1 IN/OUT
#J7102
AV2 IN/DECODER
RF OUT
RF IN
#TUNER
TU6001
MATSUSHITA
ALPS
NC(GND)
AUDIO IN
CH SW
MOD B(SW5V)
CONV_CTL
VIDEO IN
NC(GND)
RF AGC
(BT)
AS
SCL
SDA
NC
MB(SW5V)
NC
TU(30V)
IF OUT
IF IN
NC
NC
AUDIO OUT
SIF OUT
AFT
VIDEO OUT
NC(OPEN)
BB(RF5V)
AUDIO IN
MOD SDA
MOD B(RF5V)
MOD SCL
VIDEO IN
TU(30V)
RF AGC
NC
AS
SCL
SDA
NC
MB(SW5V)
NC
TU(30V)
TP
IF OUT
SW 1
SW 2
AUDIO OUT
SIF OUT
AFT
VIDEO OUT
87 #S-P CONVERTER
CN1601
SW5V
SW5V
TO_PS_C
GND
FROM_PS_C
GND
TO_PS_Y
GND
FROM_PS_Y
SW12V
SW12V
CN512
09 #LITHIUM BATTERY
(Page 4-7)
BACK UP
GND
09 #LED
LED1
LED2
AL5V
94 #SAT_CTL
#CN7102
SAT_CTL
GND
#CN7106
SAT_CTL
GND
88 #SECAM
V_TO_OSD
SECAM_PB_COLOR
SECAM_DET
GND
C.SYNC
SW5V
Fsc
CTL2
CTL4
REC_COLOR
PB_FM
39 #ADV. JOG
#CN7001
b5/KEY_OUT
JSA
GND
JSB
#CN7003
b5/KEY_OUT
JSA
GND
JSB
03 MAIN
(VIDEO/N. AUDIO/SYSCON/SERVO/SW. REG/TUNER/FRONT/ TERMINAL/FMA/#VPS-PDC/#S-SUB/DEMOD)
(VIDEO/N.AUDIO Page 4-5)
(SYSCON Page 4-7)
(FMA Page 4-9)
(SW.REG Page 4-11)
(TUNER Page 4-13)
(FRONT Page 4-15)
(TERMINAL Page 4-17)
HIFI
MONO
VCP
CN3002 GQB2532J1-02
GND
FULL ERASE
#CN1
LP/EP_CH1
LP/EP_CH2
SP_CH1
SP_CH2
FMA_CH1
FMA_CH2
CN3001 GQB2032M4-12
CAP_M_FG
CAP_M_Vcc
Vcc5V
CAP_M_F/R
LM_VCTL
M_GND
S_GND
Vcc12V
CAP_M_VCTL
LM_F/R/S
DRUM_FG/FG
DRUM_VCTL
CN3002 GQW0954-001
GND
LSA
LSB
LSC
LSD
CN2601 GQF1207C1-06
GQF1208C1-06
GQF1201C2-06
GQF1209C1-06
REC
PB
ERASE
GND(AUDIO)
CTL(-)
CTL(+)
V IN
L IN
R IN
FOR Hi-Fi
FRONT_IN J7105
F.E
FULL ERASE HEAD
41 #U. DRUM
LP/EP CH1
SP CH1
FMA CH1
LP/EP CH2
SP CH2
FMA CH2
57 CAP MDA/ DRUM MOTOR
ROTARY ENCODER
12 A/C HEAD
R/P
A.E
CTL
Different between model

4.2 MAIN(VIDEO/N.AUDIO) SCHEMATIC DIAGRAM


03 MAIN(VIDEO/N.AUDIO)
TO TERMINAL
TO FMA
TO TUNER
TO SW.REG
TO DRUM
TO SYSCON
TO VPS/PDC SLICER
TO S-SUB
TO SECAM (CN301)
CCD BLOCK
KINSEKI M3M74G Series
DATA CLK
C GND
CCD GND
D.FF A-MUTE
P/R VCC
P/R GND
A VCC
A GND
Y GND
Y VCC
KILLER C VCC
IC1 JCP8060
Q1 DTC144WUA
Q2 OPEN
Q12 2SA1576A(QR/
Q13 DTC144WUA
L10 10µ
L5 10µ
L3 10µ
L6 10µ
L7 QQR0967-001
X1 QAX0576
X2 QAX0575
D1 1SS133 1SS270A
D2 OPEN
D3 OPEN
D4 OPEN
TP105 PB.FM
TP111 D.FF
K2003 OPEN
K2004 OPEN
K2001 OPEN
K2002 OPEN
T2051 PELN0832 PELN0834 QQR0002-001
Q2051 2SC2081(QRS/ 2SD1819A(QRS/ 2PC4081R/
Q2052 2SA1576A(QR/ 2SB1218A(QR/ 2PA1576R/
Q2053 DTC144WUA DTA114WU DN2316 RN1309
Q2054 2SA1576A(QR/ 2SB1218A(QR/ 2PA1576R/
Q2055 DTC144WUA DTA114WU DN2316 RN1309
Q2003 DTC144WUA DTA114WU DN2316 RN1309
Q2001 2SC4081(QRS/ 2SD1819A(QRS/ 2PC4081R/
Q2002 2SC4081(QRS/ 2SD1819A(QRS/ 2PC4081R/
Q7 2SC4081(QRS/
Q8 2SC4081(QRS/
Q9 2SC4081(QRS/
Q10 2SC4081(QRS/
IC2001 1SS133 1SS270A
CN2001
CN2002
CN1
CTL[+]
CTL[-]
FE
N.REC[H]
N.REC_ST[H]
P/R
A.E
CTL
EP_SHORT[H]
SP_SHORT[H]
A_GND
Y_GND
CCD_GND
C_GND
A_IN1[L]
NA_REC
F_AUDIO[R]
NA_PB
RF_AUDIO
TU_AUDIO
SHORT
OPEN
QQR0967-001
DTC144WUA
2SA1576A(QR/
2SC4081(QRS/
2SD1819A(QRS/
2PC4081R/
2SA1576A(QR/
2SB1218A(QR/
2PA1576R/
DTC144WUA
DTA114WU
DN2316
RN1309
1SS133
1SS270A
JCP8060
QAX0576
QAX0575
QQR0967-001
PELN0832
PELN0834
QQR0002-001
2SC2081(QRS/
2SD1819A(QRS/
2PC4081R/
2SA1576A(QR/
2SB1218A(QR/
2PA1576R/
DTC144WUA
DTA114WU
DN2316
RN1309
2SC4081(QRS/
2SD1819A(QRS/
2PC4081R/
2SC4081(QRS/
2SC4081(QRS/
2SC4081(QRS/
2SC4081(QRS/
1SS133
1SS270A
DTC144WUA
2SA1576A(QR/
DTC144WUA
QQR0967-001
2SA1576A(QR/
DTC144WUA
2SA1576A(QR/
DTC144WUA
OPEN
OPEN
OPEN

4.3 MAIN(SYSCON) SCHEMATIC DIAGRAM



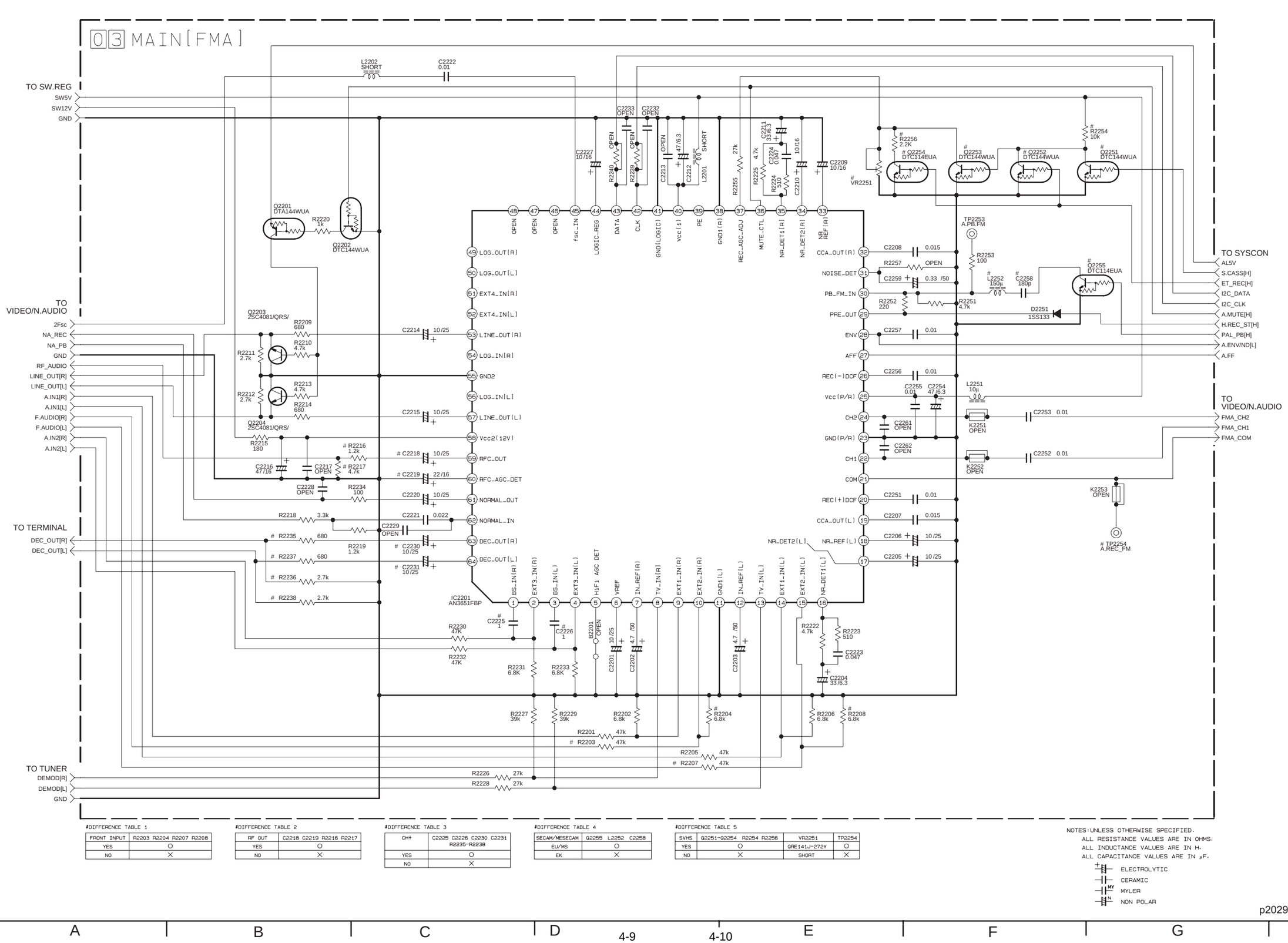
DIFFERENCE TABLE : V16 ASIA

		V600KR	J798AH
ADV.JOG/ SECAM	R3244,R3245	X	X
	R3029	X	X
	R3089	X	X
SUB-CLK	C3025	○	○
	C3041	X	X
S_CASS	S3002 R3221,R3040	X	X
CHARA_DATA	R3096,R3099	X	X
ET_REC[H]	R3084	X	X
EE[L] VC_OUT[H]	B3002	X	X
	R3097	X	X
DECODER	R3087	X	X
CH+A/ CONV_CTL[H]	R3083	1k	X
SECAM OSD/ 6 DIGIT DISPLAY	R3043	X	X
SAT_CTL/ 6 DIGIT DISPLAY	R3053	X	X
LED DISPLAY	R3058, R3063 – R3066	0Ω	0Ω
SECAM OSD	Q203,L205 R206,C211	X	X
	B3005	X	X
	B3006	X	X
OSD	B201	○	○
	R207,Q201, Q202,R211, R212,B203	X	X
P50/ AV_IN[H]	R3234,D3008, Q3007	X	X
	R3070	X	X
ESD	C3048, C3073,C3074 C3076 – C3078	X	X
EEPROM	IC3003	8k	8k
LITHIUM BATTERY BACKUP	D3007,R3256	X	○
	C3011	3300μ	1000μ
	FW7106	X	○
	CN3007	X	X
	BT3001	X	○

DIFFERENCE TABLE 2

ON BOARD WRITING
R3039,R3040,R3041 R3221,R3225,R3245, B3901,B3902,B3903 Q3901,CN3901

4.4 MAIN(FMA) SCHEMATIC DIAGRAM



#DIFFERENCE TABLE 1

FRONT INPUT	R2203 R2204 R2207 R2208
YES	○
NO	×

#DIFFERENCE TABLE 2

RF OUT	C2218 C2219 R2216 R2217
YES	○
NO	×

#DIFFERENCE TABLE 3

CH+	C2225 C2226 C2230 C2231 R2235-R2238
YES	○
NO	×

#DIFFERENCE TABLE 4

SECAM/MESECAM	Q2255 L2252 C2258
EU/MS	○
EK	×

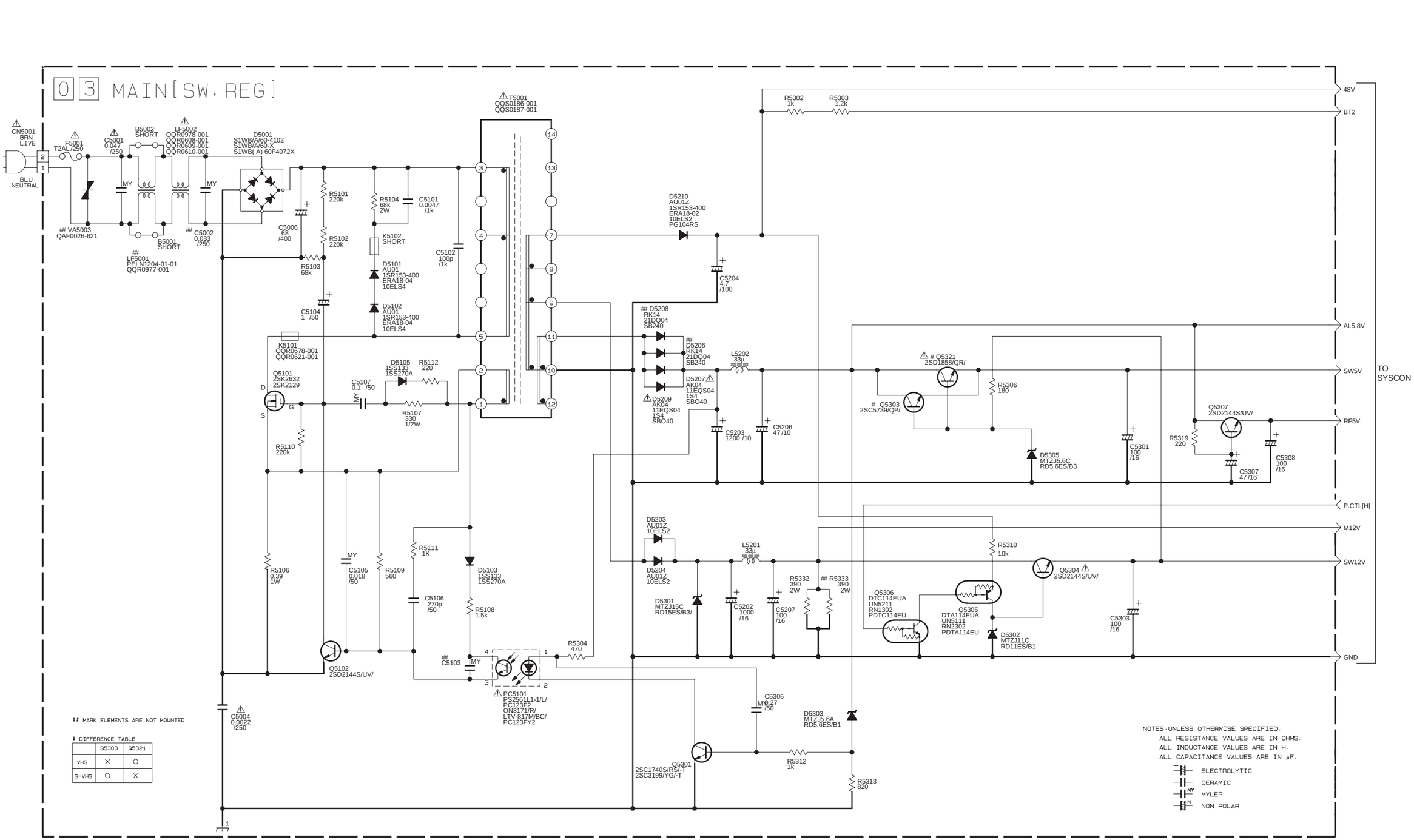
#DIFFERENCE TABLE 5

SVHS	Q2251-Q2254 R2254 R2256	VR2251	TP2254
YES	○	QRE141J-272Y	○
NO	×	SHORT	×

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

p20292001a_rev0

4.5 MAIN(SW.REG) SCHEMATIC DIAGRAM



MARK ELEMENTS ARE NOT MOUNTED

DIFFERENCE TABLE

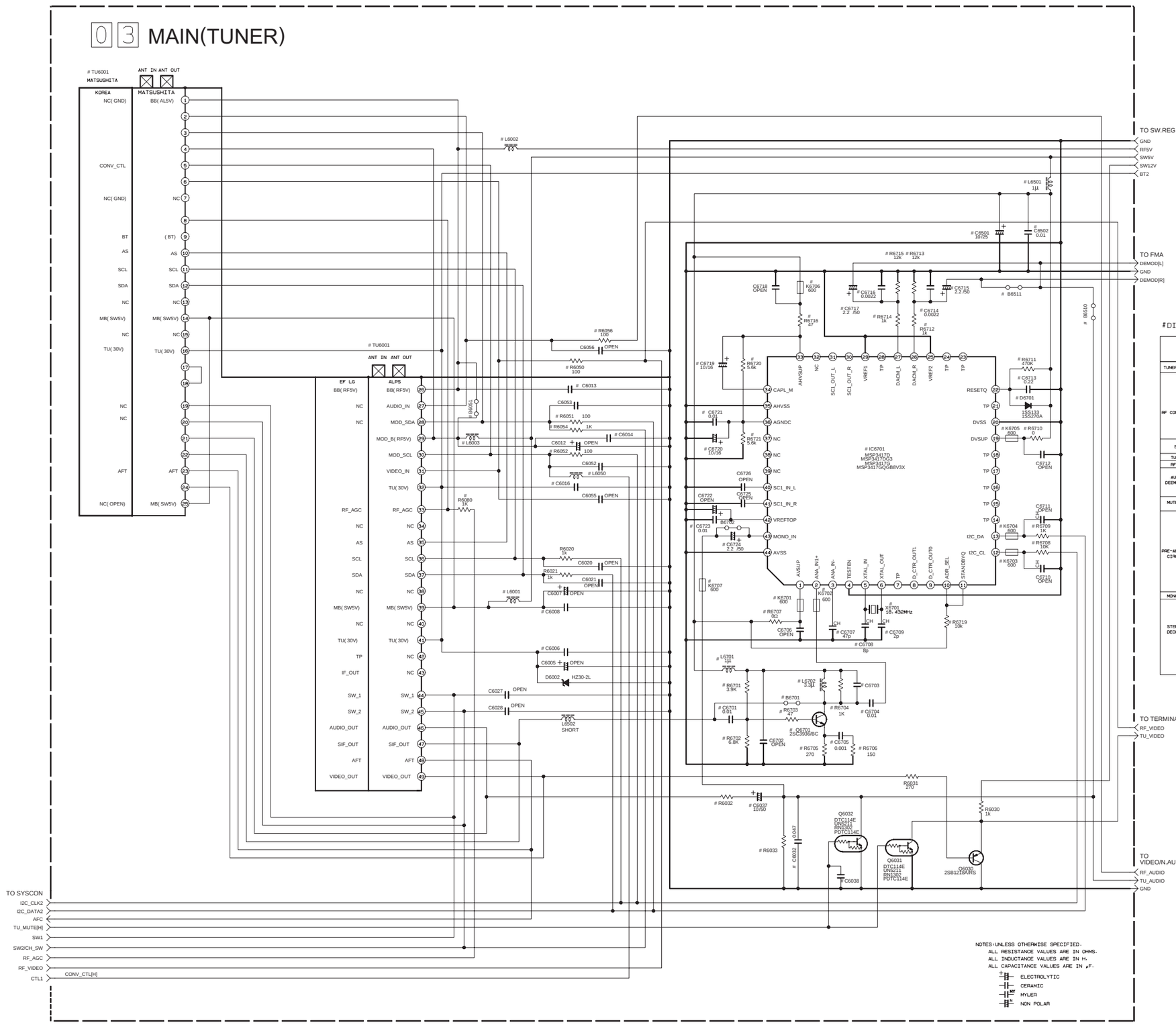
	Q5303	Q5321
VHS	×	○
S-VHS	○	×

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN µF.

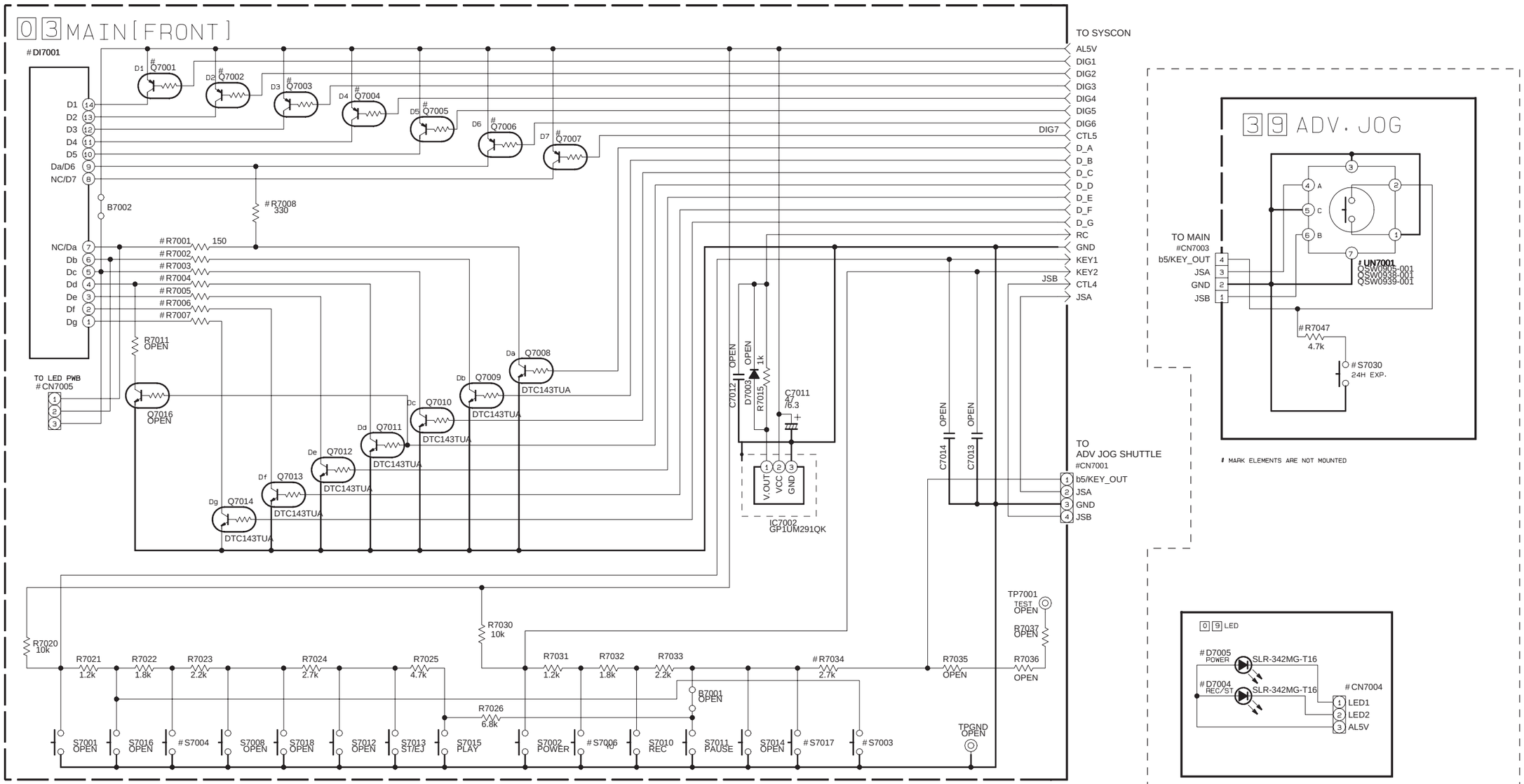
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

p20316001a_rev0

4.6 MAIN(TUNER) SCHEMATIC DIAGRAM


03 MAIN(TUNER)
TU6001
MATSUSHITA
KOREA
ANT IN ANT OUT
MATSUSHITA
EF LG
ALPS
TO SW.REG
GND
RF5V
SW5V
SW12V
BT2
TO FMA
DEMOD[L]
GND
DEMOD[R]
TO TERMINAL
RF_VIDEO
TU_VIDEO
TO VIDEO/N.AUDIO
RF_AUDIO
TU_AUDIO
GND
TO SYSCON
I2C_CLK2
I2C_DATA2
AFC
TU_MUTE[H]
SW1
SW2/CH_SW
RF_AGC
RF_VIDEO
CTL1
CONV_CTL[H]
IC6701
MSP3417D
MSP3417D-G3
MSP3417G
MSP3417G-QG-B8-V3X
L6002
L6501 1μ
C6501 10/25
C6502 0.01
R6715 # R6713 12k
C6716 0.0022
C6715 2.2 /50
C6717 2.2 /50
C6714 0.0022
R6714 1k
R6712 1k
B6511
C6718 OPEN
K6706 600
R6716 47
C6719 10/16
R6720 5.6k
R6711 470k
C6713 0.22
D6701 1SS133 1SS270A
K6705 600
R6710 0
C6712 OPEN
C6721 0.01
R6721 5.6k
C6720 10/16
RESETQ
DVSS
DVSUP
C6726 OPEN
C6722 OPEN
C6725 OPEN
B6702
C6723 0.01
C6724 2.2 /50
K6704 600
R6709 1K
R6708 10K
C6711 OPEN
C6710 OPEN
K6703 600
I2C_DA
I2C_CL
K6707 600
K6701 600
K6702 600
R6707 0Ω
X6701 18.432MHz
C6706 OPEN
C6707 47p
C6709 2p
C6708 8p
R6719 10k
L6701 1μ
R6701 3.9K
L6702 3.3μ
C6703
B6701
C6701 0.01
R6703 47
R6704 1K
C6704 0.01
Q6701 2SC3930/BC
C6702 OPEN
R6702 6.8K
R6705 270
C6705 0.001
R6706 150
R6031 270
R6032
C6037 10/50
R6033
C6032 0.047
Q6032 DTC114E UN5211 RN1302 PDTC114E
Q6031 DTC114E UN5211 RN1302 PDTC114E
Q6030 2SB1218ARS
R6030 1k
C6038
TU6001
ANT IN ANT OUT
L6003 0Ω
B6501
C6013
C6053
R6051 100
R6054 1K
C6014
C6012 OPEN
R6052 100
C6052
L6050
C6016
C6055 OPEN
R6080 1K
R6020 1k
C6020 OPEN
R6021 1k
C6021 OPEN
C6007 OPEN
L6001
C6008
C6006
C6005 OPEN
D6002 HZ30-2L
C6027 OPEN
C6028 OPEN
L6502 SHORT
R6056 100
C6056 OPEN
# R6050 100
NC(GND)
CONV_CTL
NC(GND)
BT
AS
SCL
SDA
NC
MB(SW5V)
NC
TU(30V)
AFT
NC(OPEN)
(BT)
NC
NC
NC

4.7 MAIN(FRONT) SCHEMATIC DIAGRAM



#DIFFERENCE TABLE 1

TOOL	Working No	S7001	S7002	S7003	S7004	S7006	S7008	S7010	S7011	S7012	S7013	S7014	S7015	S7016	S7017	S7018	S7030	R7034 R7047	UN7001 CN7003
400K	D1/S0	-	POWER	PR-	REW	FF	-	REC	REC LINK/ PAUSE	-	ST/EJ	-	PLAY	-	PR+	-	X	X	X
400KA	D1+	-	POWER	TIMER	INSTANT REVIEW	SP/LP	-	REC	REC LINK/ PAUSE	-	ST/EJ	-	PLAY	-	DISPLAY	-	24H EXP	0	0
	S0+	-	POWER	TIMER	COUNTER RESET	SP/LP	-	REC	REC LINK/ PAUSE	-	ST/EJ	-	PLAY	-	DISPLAY	-	24H EXP	0	0

#DIFFERENCE TABLE 2

Working No	DI7001	Q7001- Q7005	Q7006. Q7007	R7008	R7001	R7002- R7007
S0. S0+	LTG-0126M-03	2SB1218A/QR 2SA1576A/QR 2PA1576/R	2SB1218A/QR 2SA1576A/QR 2PA1576/R	X	0	150
D1. D1+	LTG-Y2K16M-J	DTA143TUA-X	OPEN	0	X	330

#DIFFERENCE TABLE 3

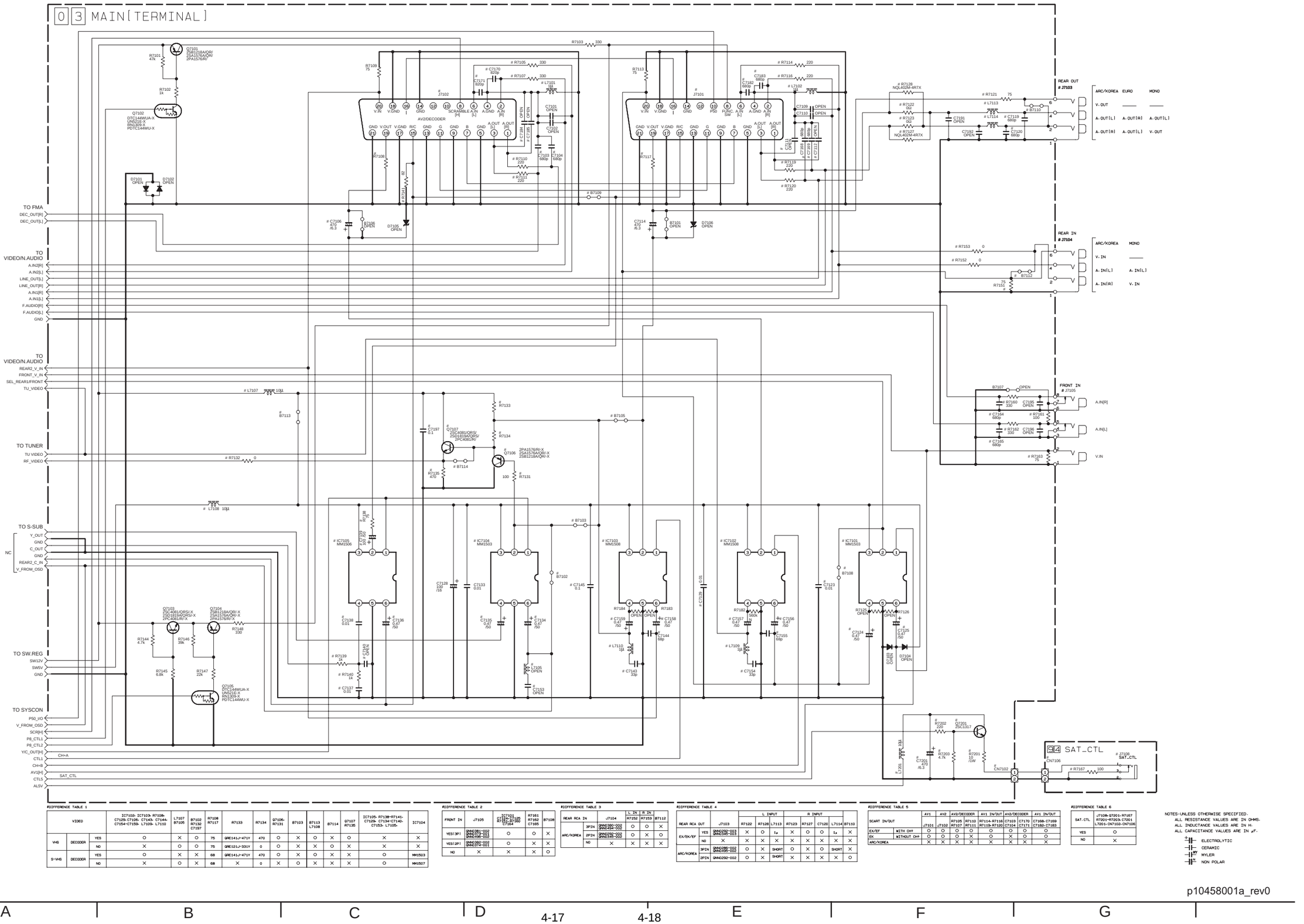
	CN7004 CN7005	D7004 D7005
VCP	0	0
VCR	X	X

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MY MYLER
N NON POLAR

p20314001a_rev0

4.8 MAIN(TERMINAL) SCHEMATIC DIAGRAM



#DIFFERENCE TABLE 1

VIDEO			IC7102- IC7103- R7108- C7129- C7106- C7143- C7144- C7154- C7159- L7109- L7110	L7107 R7105	B7102 R7132 C7197	R7108 R7117	R7133	R7134	G7106- R7131	B7103	B7113 L7108	B7114	G7107 R7135	IC7105- R7138-R7141- C7129- C7134-C7140- C7153- L7105-	IC7104
VHS	DECODER	YES	○	×	○	75	GRE141J-471Y	470	○	×	○	×	○	×	×
		NO	×	○	○	75	GRE121J-331Y	0	○	×	×	○	×	×	×
S-VHS	DECODER	YES	○	×	×	68	GRE141J-471Y	470	○	×	○	×	×	○	MM1503
		NO	×	○	×	68	×	0	×	○	×	×	×	○	MM1507

#DIFFERENCE TABLE 2

FRONT IN	J7105	J7101 J7102 J7103 J7104 J7106 C7164	R7161 R7162 C7165	B7108
YES(3P)	GND378-002 GND379-001 GND496-002	○	○	×
YES(2P)	GND380-002 GND374-001	○	×	×
NO	×	×	×	○

#DIFFERENCE TABLE 3

REAR RCA IN		J7104	L IN R7152	R IN R7153	B7112
ARC/KOREA	3PIN	GND380-002 GND494-002	○	○	×
	2PIN	GND292-002 GND345-002	○	×	○
	NO	×	×	×	×

#DIFFERENCE TABLE 4

REAR RCA OUT	J7103	L INPUT R7122	L INPUT R7128	L INPUT L7113	R INPUT R7123	R INPUT R7127	R INPUT C7120	R INPUT L7114	B7110
EX/EX/EF	GND295-003 GND345-003	×	○	t_B	×	○	○	t_B	×
	NO	×	×	×	×	×	×	×	×
ARC/KOREA	3PIN	GND295-003 GND345-003	○	×	SHORT	○	×	○	SHORT	×
	2PIN	GND292-002	○	×	SHORT	×	×	×	×	○

#DIFFERENCE TABLE 5

SCART IN/OUT		AV1 J7101	AV2 J7102	AV2/DECODER R7105 R7107	AV1 IN/OUT R7110 R7111	AV1 IN/OUT R7114-R7116 R7119-R7120	AV2/DECODER C7103 C7104	AV2/DECODER C7170 C7171	AV1 IN/OUT C7166- C7169 C7182- C7183
EX/EF	WITH CH#	○	○	○	○	○	○	○	○
EX	WITHOUT CH#	○	○	○	×	○	×	○	○
ARC/KOREA		×	×	×	×	×	×	×	×

#DIFFERENCE TABLE 6

SAT.CTL	J7108- Q7201- R7167 R7201-R7203- C7201 L7201- CN7102- CN7106
YES	○
NO	×

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN µF.

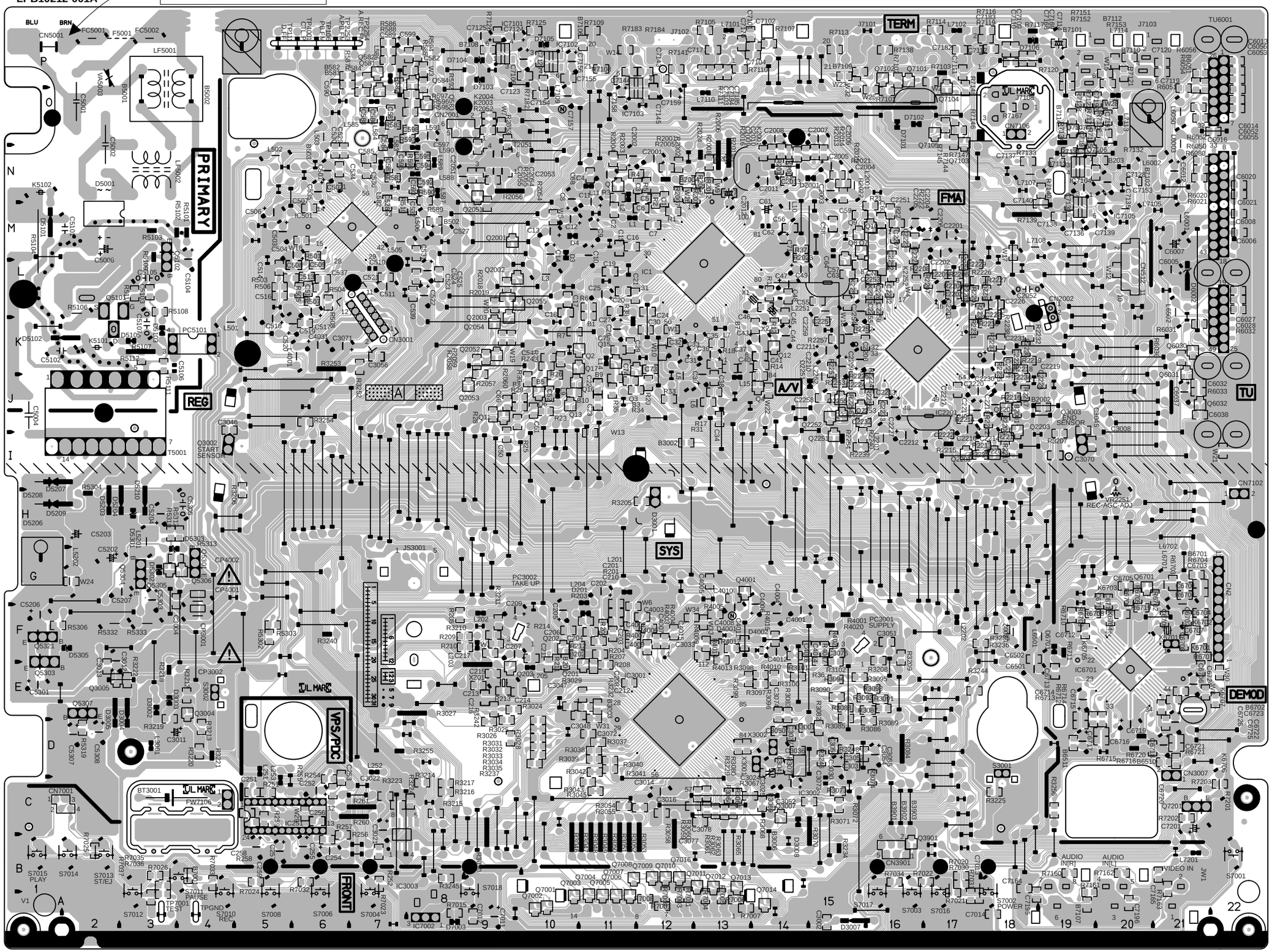
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

p10458001a_rev0

4.9 MAIN CIRCUIT BOARD

<03> MAIN
LPB10212-001A

DANGEROUS VOLTAGE



COMPONENT PARTS LOCATION GUIDE <MAIN> LPB10212-001A

REF.NO.	LOCATION
CAPACITOR	
C1	B C 12N
C2	B C 11M
C3	B C 12N
C4	A D 11N
C5	B C 12N
C6	B C 12M
C7	B C 12M
C8	A D 10M
C9	A D 11M
C10	A D 11M
C11	A D 11N
C12	A D 10M
C13	A D 10M
C14	A D 10M
C15	B C 11M
C16	B C 11M
C17	B C 10L
C18	B C 10L
C19	B C 11L
C20	B C 11L
C21	B C 11L
C22	B C 11J
C23	B C 11J
C24	B C 12L
C25	A D 11L
C26	A D 11K
C27	B C 11L
C29	B C 11K
C30	B C 12K
C31	A D 12K
C32	B C 12K
C33	A D 12K
C34	B C 13J
C35	B C 13K
C36	A D 13K
C37	B C 13K
C38	B C 13J
C39	A D 13J
C40	B C 13K
C41	B C 14K
C43	A D 14K
C44	A D 14K
C45	B C 14L
C46	B C 14L
C47	A D 14L
C48	B C 14L
C49	A D 14L
C50	B C 9I
C51	B C 10J
C52	B C 10J
C54	B C 10K
C55	B C 15L
C56	B C 14M
C57	B C 15L
C58	B C 15M
C59	B C 15M
C60	B C 16M
C61	A D 14M
C62	A D 14M
C63	B C 15L
C64	A D 15L
C66	B C 9J
C68	B C 11N
C71	A D 14M
C73	B C 12K
C74	B C 11K
C75	B C 11K
C201	B C 11G
C202	A D 11G
C203	B C 11F
C204	B C 11F
C205	A D 10F
C206	B C 10F
C207	A D 9F
C208	B C 11E
C209	A D 9F
C210	B C 11F
C211	B C 10E
C212	B C 11E
C213	B C 9E
C214	B C 9E
C215	B C 9E
C216	B C 9E
C217	B C 9F
C251	B C 5C
C252	A D 6C
C253	B C 6C
C254	A D 6B
C255	A D 6B
C256	B C 6C
C257	A D 5B
C258	B C 5C
C259	A D 5B
C501	A D 6N
C502	B C 6N
C503	A D 5M
C504	A D 6M
C506	A D 5M
C507	B C 6M
C508	B C 6L
C509	B C 6L
C510	A D 7L
C511	A D 7L
C513	B C 6L
C514	B C 5L
C515	B C 6L
C516	B C 5L
C517	A D 6L
C518	A D 5K
C519	B C 6K
C520	A D 6K
C521	B C 7L
C522	A D 8L
C523	B C 8L
C524	A D 8L
C525	B C 8L
C527	A D 8M
C528	B C 7M
C529	B C 6N
C530	B C 6N
C531	B C 8M
C532	B C 8M
C534	B C 6N
C535	A D 6N
C536	B C 7N
C537	B C 6L
C539	B C 8L
C582	B C 8P
C583	B C 7N
C584	B C 7O
C585	B C 7N
C586	B C 7O
C587	B C 7O
C588	B C 7O
C589	B C 7P
C590	B C 6P
C592	B C 8N
C593	B C 8N
C594	B C 8N
C595	B C 8N
C596	B C 7N
C597	A D 8O
C598	B C 8O
C599	A D 7P
C2001	A D 12N
C2002	A D 11N
C2003	A D 15N
C2004	B C 15N
C2005	A D 15N
C2006	B C 15N
C2007	A D 15O
C2008	A D 14O
C2009	B C 14N
C2010	B C 14N
C2011	A D 14N
C2012	A D 13M
C2013	B C 14N
C2051	B C 9N
C2052	A D 18L
C2053	B C 9N
C2054	B C 9N
C2055	A D 8N
C2201	A D 17M
C2202	A D 17M
C2203	A D 17L
C2204	A D 17M
C2205	A D 16M
C2206	A D 17M
C2207	B C 16M
C2208	B C 15K
C6016	B C 22O
C6020	B C 22N
C6021	B C 22N
C6027	B C 22L
C6028	B C 22L
C6032	B C 21J
C6037	A D 21J
C6038	B C 21J
C6052	B C 22O
C6053	B C 22P
C6055	B C 22O
C6056	B C 22P
C6501	A D 19E
C6502	B C 18F
C6701	B C 21G
C6702	B C 21F
C6703	B C 21G
C6704	B C 21F
C6705	B C 20G
C6706	B C 21E
C6707	B C 21F
C6708	B C 21F
C6709	B C 21F
C6710	B C 20G
C6711	B C 20G
C6712	B C 19F
C6713	B C 19E
C6714	B C 19E
C6715	A D 19E
C6716	B C 20D
C6717	A D 19D
C6718	B C 20D
C6719	A D 20D
C6720	A D 21D
C6721	B C 21D
C6722	A D 21E
C6723	B C 21E
C6724	A D 21E
C6725	B C 21D
C6726	B C 21E
C7011	A D 9A
C7012	B C 9A
C7013	B C 17A
C7014	B C 18A
C7101	B C 13P
C7102	B C 14P
C7103	B C 13P
C7104	B C 14P
C7106	A D 10P
C7109	B C 18P
C7110	B C 18P
C7111	B C 17P
C7112	B C 17P
C7114	A D 19P
C7119	B C 21P
C7120	B C 21P
C7123	B C 10P
C7124	A D 9P
C7125	A D 9P
C7128	A D 19N
C7129	B C 10P
C7133	B C 19M
C7134	A D 20N
C7135	A D 20N
C7136	A D 19M
C7137	B C 18N
C7138	B C 19M
C7139	A D 20M
C7140	B C 19M
C7143	B C 12P
C7144	B C 11P
C7145	B C 12O
C7153	B C 20N
C7154	B C 10O
C7155	B C 10P
C7156	A D 10P
C7157	A D 10O
C7158	A D 11O
C7159	A D 12O
C7164	B C 18B
C7165	B C 21B
C7168	B C 18P
C7169	B C 18P
C7170	B C 13P
C7171	B C 13P
C7182	B C 17P
C7183	B C 18P
C7184	B C 13P
C7185	B C 13P
C7191	B C 20O
C7192	B C 20O
C7195	B C 18A
C7196	B C 20A
C7197	B C 19O
C7201	A D 21C
CONNECTOR	
CN1	A D 16M
CN2	A D 22F
CN512	A D 20M
CN2001	A D 9O
CN2002	A D 19L
CN3001	A D 7L
CN3007	A D 21D
CN3901	A D 16B
CN5001	A D 1P
CN7001	A D 1C
CN7102	A D 22H
CN7106	A D 18O
DIODE	
D3	A D 10M
D4	A D 11M
D201	A D 11F
D2001	A D 15N
D2251	A D 15J
D3001	A D 12H
D3002	A D 3D
D3003	A D 3E
D3004	A D 3E
D3005	A D 2E
D3007	A D 16A
D3008	A D 14C
D4001	B C 13F
D4002	B C 14F
D5001	B C 2M
D5002	A D 2K
D5101	A D 1M
D5102	A D 2K
D5103	A D 3K
D5105	A D 3K
D5203	A D 2I
D5204	A D 3I
D5206	A D 2H
D5207	A D 2I
D5208	A D 2I
D5209	A D 2H
D5210	A D 3I
D5301	A D 3H
D5302	A D 3G
D5303	A D 4G
D5305	A D 2F
D6002	A D 21L
D6701	A D 19F
D7003	A D 8A
D7101	A D 16O
D7102	A D 17O
D7103	A D 9P
D7104	A D 9P
D7105	A D 10P
D7106	A D 18P
FUSE	
F5001	A D 2P
IC	
IC1	B C 13L
IC251	A D 5C
IC501	B C 7M
IC2201	B C 16K
IC3001	B C 12D
IC3002	B C 14D
IC3003	B C 7B
IC6701	B C 20E
IC7002	A D 8A
IC7101	B C 9P
IC7102	B C 10P
IC7103	B C 12O
IC7104	B C 19N
IC7105	B C 19M
COIL	
L1	A D 12M
L2	A D 11M
L3	A D 10L
L5	A D 12K
L6	A D 13J
L7	A D 13K
L9	A D 10J
L10	A D 14M
L11	A D 11N
L14	A D 11K
L15	A D 13J
L201	A D 11G
L202	A D 9F
L203	A D 9F
L204	A D 11G
L205	A D 10E
L251	A D 5C
L252	A D 7D
L253	A D 5C
L501	A D 5K
L502	A D 5N
L503	A D 6N
L505	A D 8M
L506	A D 8M
L582	A D 7N
L583	A D 7N
L584	A D 7O
L585	A D 7O
L586	A D 7P
L587	A D 8N
L588	A D 8N
L589	A D 8N
L590	A D 8N
L591	A D 8O
L2001	A D 15N
L2002	B C 9L
L2003	B C 9L
L2201	A D 16J
L2202	A D 17F
L2251	A D 15L
L2252	A D 15K
L3001	A D 3D
L3002	A D 21N
L6001	A D 21M
L6002	A D 21N
L6003	A D 21N
L6050	A D 21O
L6501	A D 19F
L6502	A D 21L
L6701	A D 21G
L6702	A D 21G
L7101	A D 13P
L7102	A D 17P
L7105	A D 20M
L7107	A D 19N
L7108	A D 19M
L7109	A D 10O
L7110	A D 13O
L7113	A D 20O
L7114	A D 20O
L7201	A D 21B
TRANSISTOR	
Q1	B C 11N
Q2	B C 11K
Q3	B C 12K
Q4	B C 14J
Q6	B C 10J
Q7	B C 15M
Q8	B C 15M
Q9	B C 15M
Q10	B C 16M
Q11	B C 9J
Q12	B C 14K
Q13	B C 14K
Q14	B C 15F
Q7008	B C 11B
Q7009	B C 12B
Q7010	B C 12B
Q7011	B C 13B
Q7012	B C 13B
Q7013	B C 13B
Q7014	B C 14A
Q7016	B C 12B
Q7101	B C 16P
Q7102	B C 16P
Q7103	B C 17O
Q7104	B C 17P
Q7105	B C 17O
Q7106	B C 19N
Q7107	B C 19O
Q7201	A D 21C
RESISTOR	
R1	B C 12M
R2	B C 12N
R3	B C 11N
R4	B C 12N
R5	B C 12N
R6	B C 11L
R7	B C 10K
R11	B C 14L
R12	B C 14K
R13	B C 14K
R14	B C 14K
R17	B C 13J
R18	B C 13K
R20	B C 12J
R21	B C 16M
R22	B C 16M
R23	B C 10J
R24	B C 10K
R25	B C 9J
R26	B C 10J
R28	B C 9J
R29	B C 9J
R30	B C 10J
R31	B C 13J
R32	B C 12J
R33	B C 12J
R34	B C 12J
R35	B C 11J
R36	B C 15F
R37	B C 14M
R38	A D 11K
R39	B C 10K
R201	B C 11F
R202	B C 11F
R203	B C 11F
R204	B C 11F
R205	B C 8F
R206	A D 9E
R207	B C 11F
R208	B C 11E
R209	B C 9F
R210	B C 9F
R211	B C 10F
R212	B C 10F
R213	B C 9E
R214	B C 10F
R251	B C 5C
R252	B C 7B
R2053	B C 9O
R2054	B C 9M
R2055	B C 9N
R2056	A D 10N
R2057	B C 9K
R2058	B C 9K
R2059	B C 9K
R2060	B C 9K
R2061	B C 17L
R2062	B C 17L
R2063	B C 17L
R2064	B C 17L
R2065	B C 17L
R2066	B C 17L
R2067	B C 17L
R2068	B C 17L
R2069	B C 17J
R2070	B C 17I
R2071	B C 18I
R2072	B C 18I
R2073	B C 18J
R2074	B C 18J
R2075	B C 18J
R2076	B C 18J
R2077	B C 18J
R2078	B C 18J
R2079	B C 18J
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R2081	B C 15J
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R2086	B C 15J
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R2089	B C 15J
R2090	B C 15J
R2091	B C 15J
R2092	B C 15J
R2093	B C 15J
R2094	B C 15E
R3095	B C 15E
R3096	B C 14E
R3097	B C 14E
R3098	B C 14E
R3099	B C 13E
R3100	B C 14E
R3101	B C 14E
R3102	B C 15F
R3103	B C 12H
R3206	B C 5H
R3207	B C 19I
R3208	B C 16F
R3209	B C 16F
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R3211	B C 9F
R3212	B C 4E
R3213	B C 4D
R3214	B C 8C
R3215	B C 8C
R3216	B C 8C
R3217	B C 8C
R3218	A D 3E
R3219	B C 3E
R3220	B C 4D
R3221	A D 4D
R3222	B C 3E
R3223	B C 7C
R3224	B C 8C
R3225	B C 18C
R3229	B C 13D
R3232	B C 11E
R3234	A D 15B
R3235	B C 18F
R3236	B C 18F
R3237	B C 10D
R3240	A D 6F
R3242	B C 9E
R3244	B C 17E
R3245	B C 8B
R3246	B C 15D
R3248	B C 15D
R3252	B C 7K
R3253	A D 7K
R3254	B C 6J
R3255	A D 8D
R3256	B C 19C
R3401	A D 15F
R4003	B C 12F
R4004	B C 12F
R4005	B C 13F
R4006	B C 12F
R4007	B C 11F
R4009	B C 13F
R4010	B C 14F
R4012	B C 13F
R4013	B C 13F
R4015	B C 14F
R4016	B C 13F
R4017	B C 15F
R4020	A D 15F
R4021	B C 15F
R4022	B C 15F
R4023	B C 14M
R4024	A D 13N
R4025	B C 9O
R4026	B C 9O
R4027	A D 7E
R4028	B C 9D
R4029	B C 11E
R4030	A D 9B
R4031	B C 10D
R4032	B C 10D
R4033	B C 10D
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R4043	B C 11C
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R4047	A D 11C
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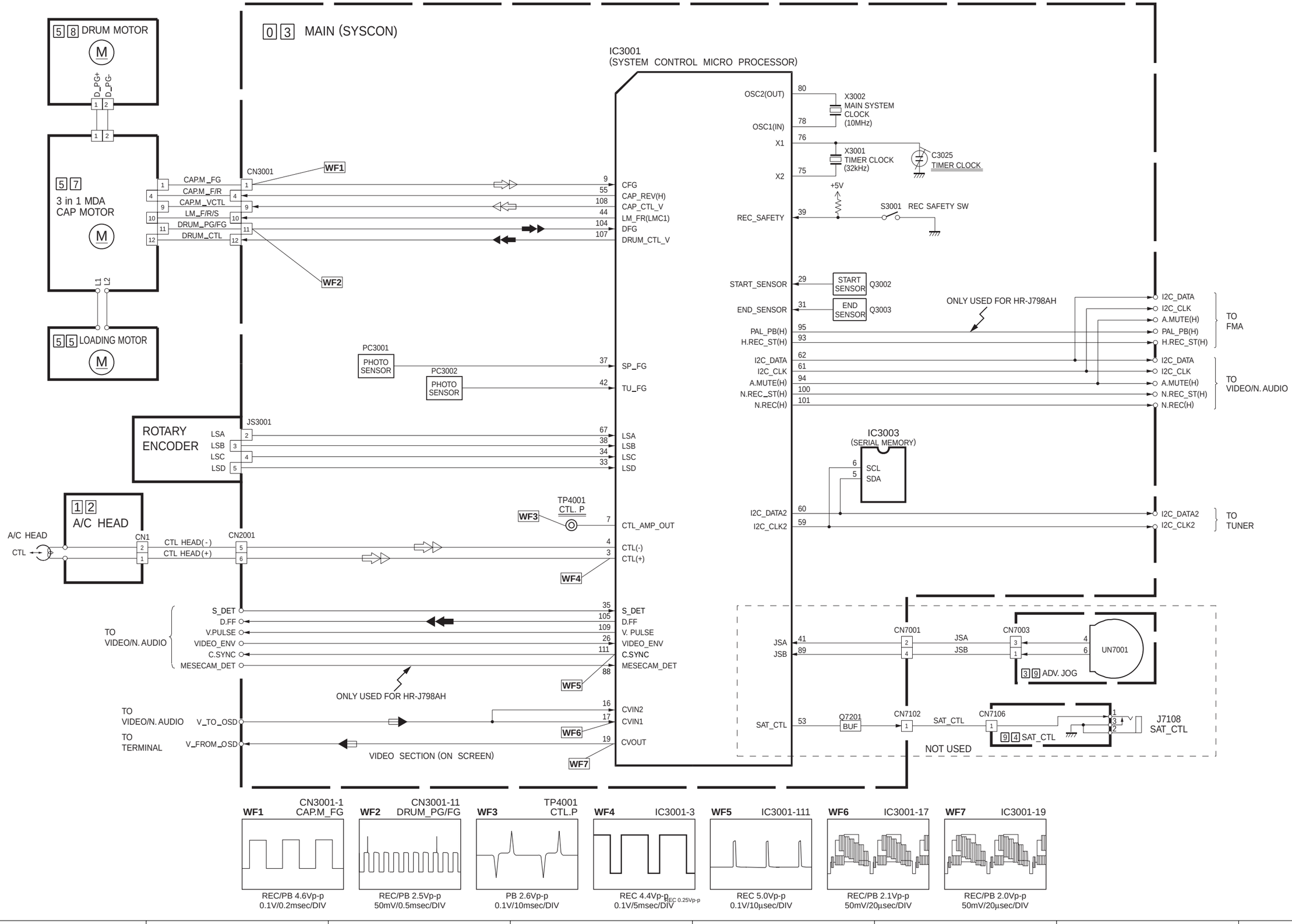
R7183	B C 5K
R7184	B C 5K
R7201	A D 5K
R7202	B C 5K
R7203	B C 5K
SWITCH	
S3001	A D 18C
S3002	A D 4E
S7001	A D 22B
S7002	A D 18B
S7003	A D 16B
S7004	A D 7B
S7006	A D 6B
S7008	A D 5B
S7010	A D 4B
S7011	A D 4B
S7012	A D 3B
S7013	A D 2B
S7014	A D 2B
S7015	A D 1B
S7016	A D 17B
S7017	A D 16B
S7018	A D 9B
TEST POINT	
TP106	A D 6P
TP111	A D 5P
TP2253	A D 6P
TP2254	A D 7P
TP4001	A D 6P
TP7001	A D 3A
TPGND	A D 4A
OTHER	
B1	B C 11L
B3	B C 11J
B4	B C 14J
B5	B C 10J
B7	B C 14K
B8	B C 9J
B9	B C 11J
B10	B C 10J
B201	B C 10F
B202	B C 10F
B203	B C 20N
B502	B C 8M
B503	A D 6N
B581	B C 6P
B582	B C 6P
B2001	B C 18J
B2002	B C 19J
B2003	B C 13N
B2004	B C 12N
B2201	B C 18L
B3001	B C 14D
B3002	B C 12I
B3003	B C 11E
B3005	A D 9B
B3006	A D 14B
B3901	A D 16C
B3902	A D 16C
B3903	A D 16C
LF5001	A D 4P
LF5002	A D 3N
PC3001	A D 15F
PC3002	A D 9F
PC04042	A D 21F
PC5101	A D 4K
T2051	A D 9N
T5001	A D 3I
TU6001	A D 22P
VA5003	A D 2O
VR2251	A D 20H
X1	A D 14L
X2	A D 14K
X201	A D 9E
X3001	A D 14D
X3002	A D 14D
X6701	A D 21F

4.10 CPU PIN FUNCTION

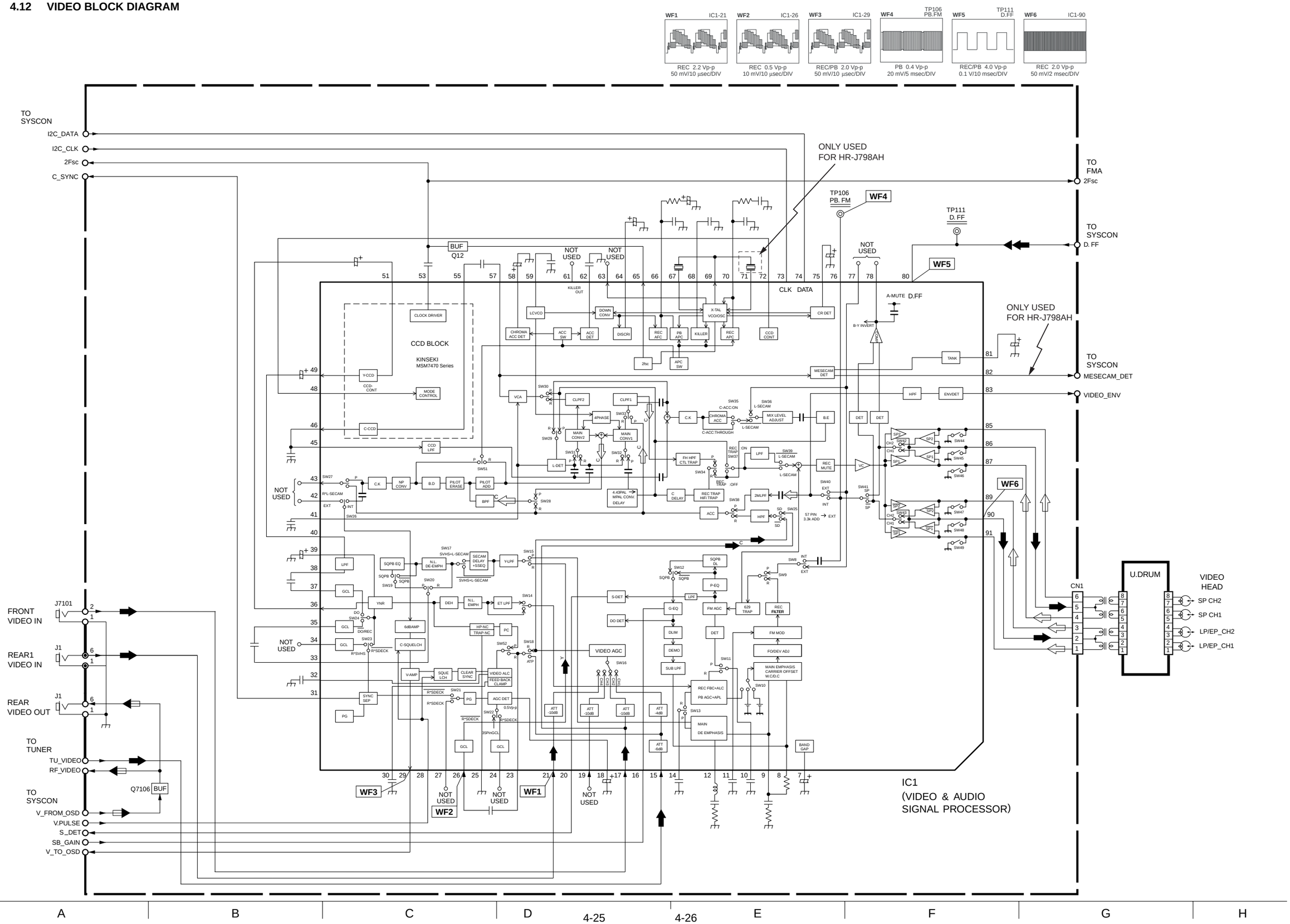
<SYSCON IC3001>

PIN NO.	LABEL	IN/OUT	FUNCTION
1	SVss	-	GND
2	CTLREF	-	CTL REFERENCE VOLTAGE
3	CTL(+)	-	CTL(+) SIGNAL
4	CTL(-)	IN/OUT	CTL(-) SIGNAL
5	CTLBIAS	-	CTL BIAS VOLTAGE
6	CTLFB	IN	CTL PULSE FEEDBACK
7	CTLAMPOUT	OUT	CTL PULSE OUTPUT
8	CTLSMTIN	IN	CTL PULSE INPUT
9	CFG	IN	CAPSTAN FG PULSE INPUT
10	SVcc	-	SYSTEM POWER
11	AFCpc	OUT	AFC CLOCK (SYNC SEPARATOR FOR OSD / EXTERNAL CIRCUIT FOR AFC)
12	AFCosc	OUT	AFC CLOCK (SYNC SEPARATOR

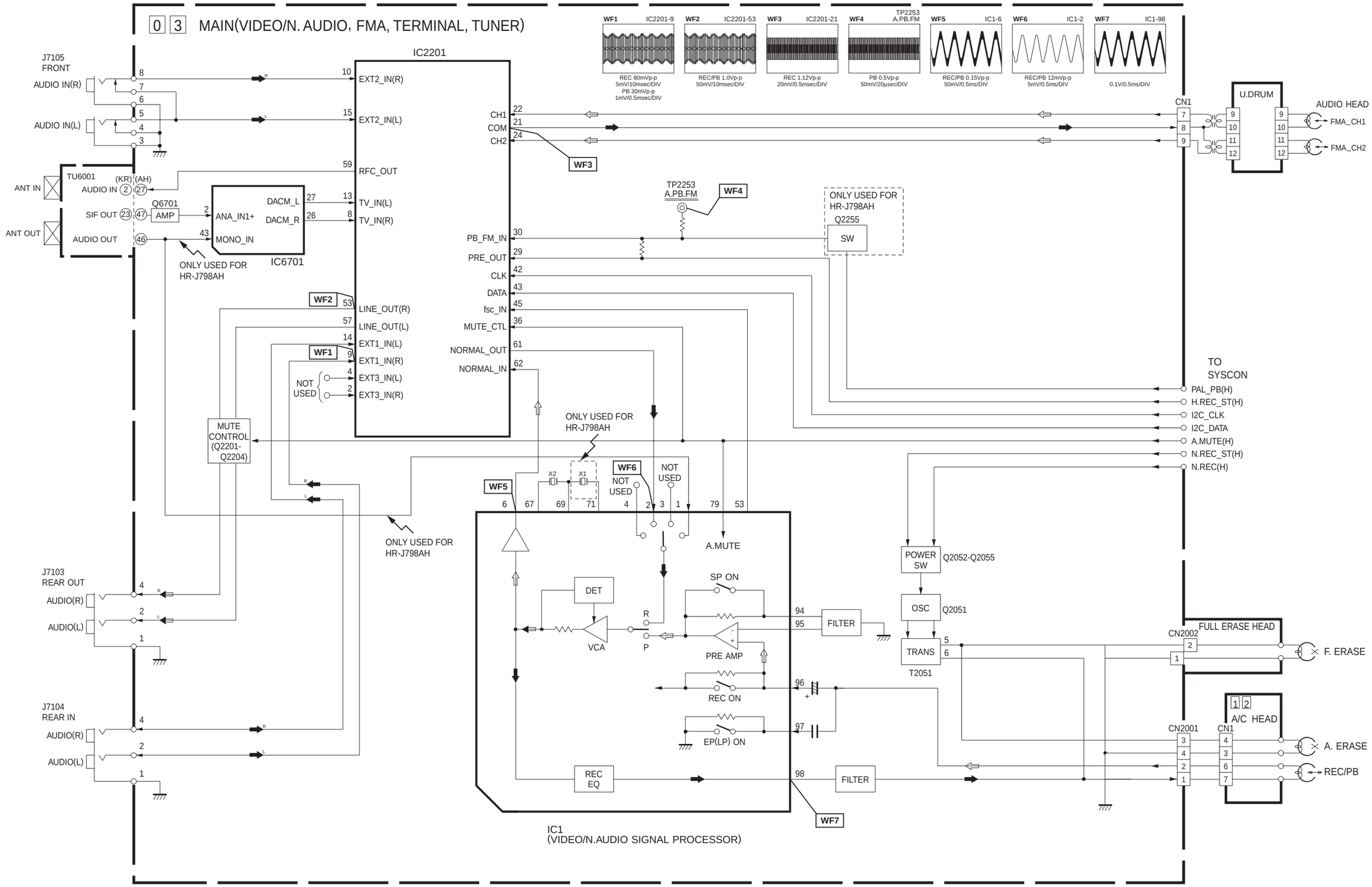
4.11 SYSTEM CONTROL BLOCK DIAGRAM



4.12 VIDEO BLOCK DIAGRAM



4.13 AUDIO BLOCK DIAGRAM



SECTION 5
PARTS LIST

5.1 EXPLODED VIEW

SAFETY PRECAUTION

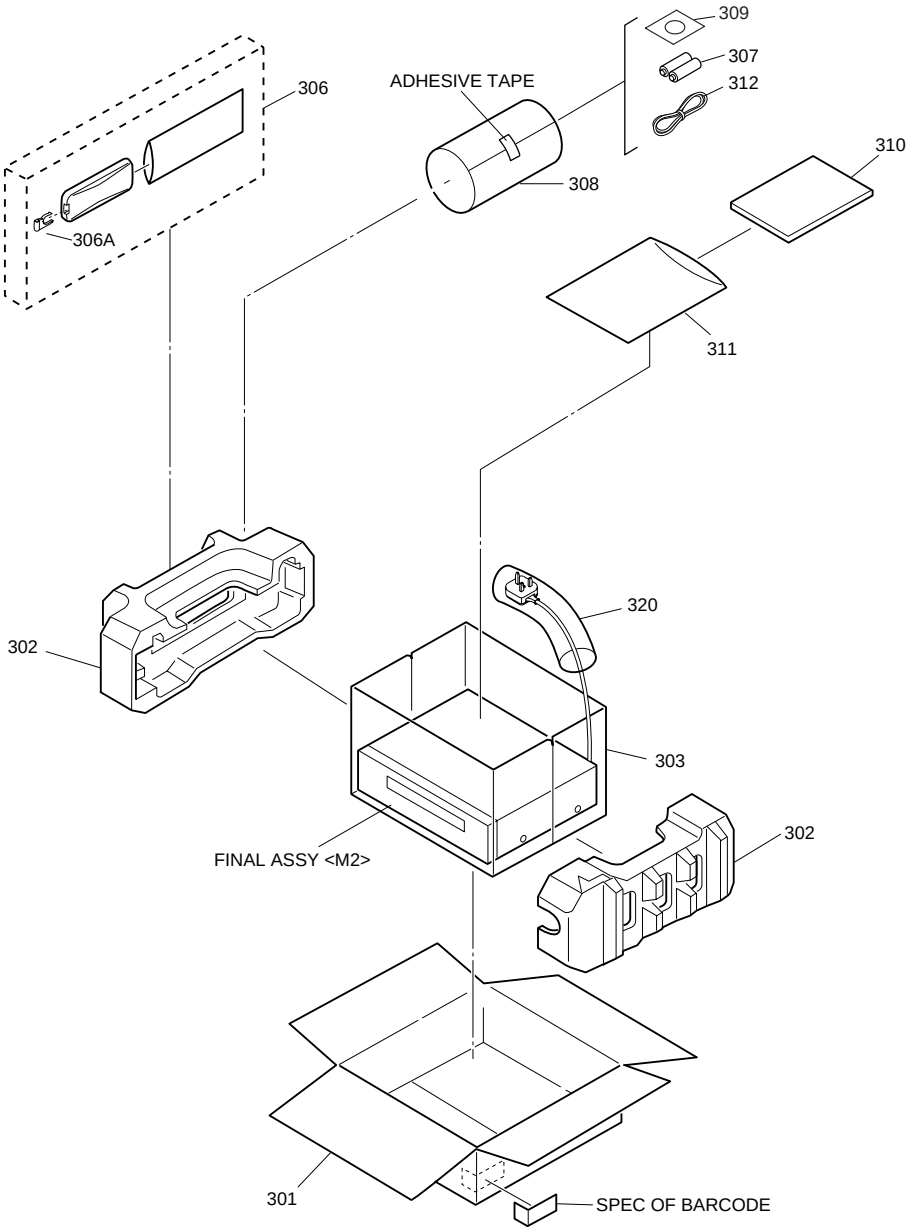
Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

BEWARE OF BOGUS PARTS

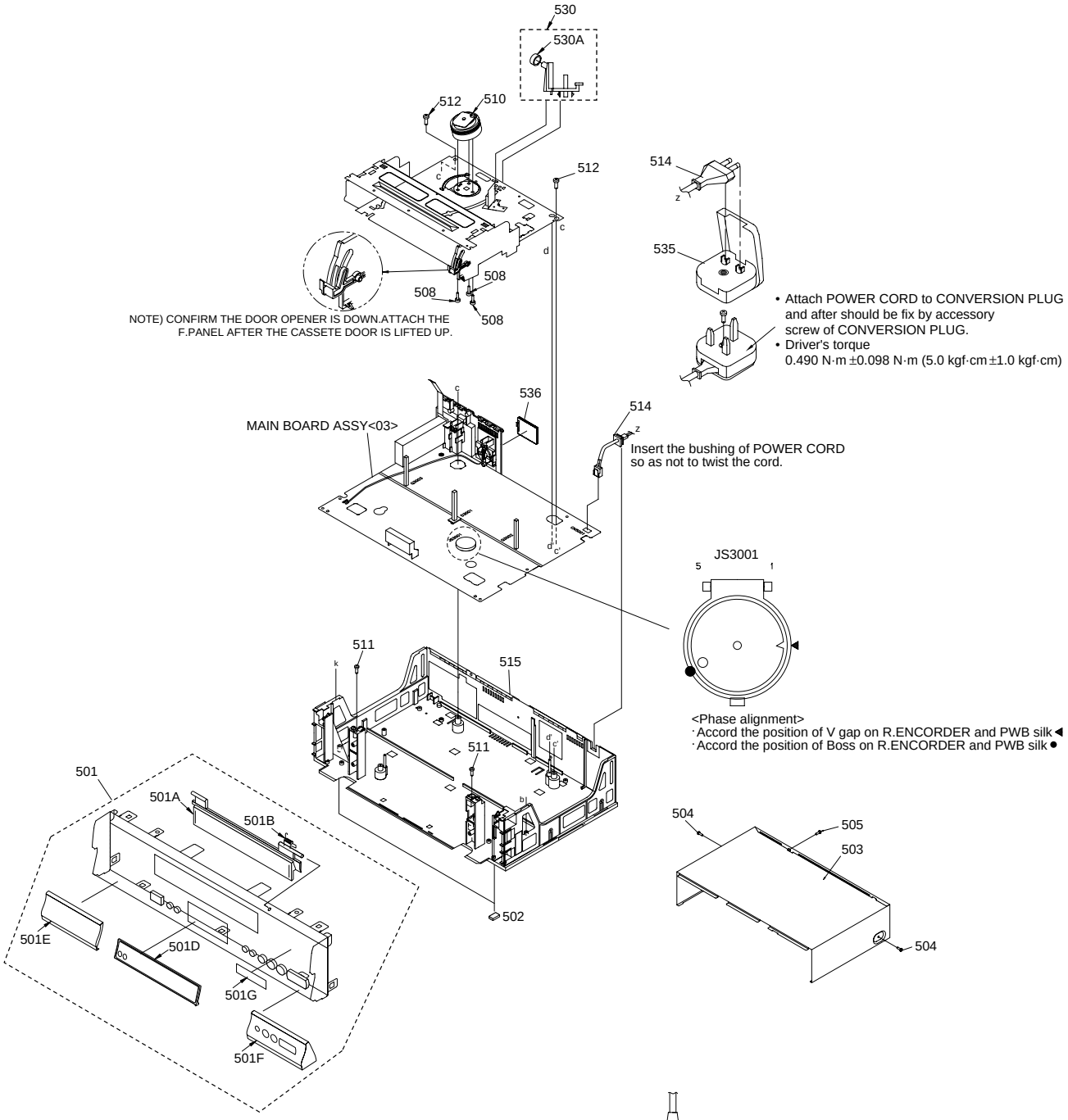
Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.

5.1.1 PACKING AND ACCESSORY ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.

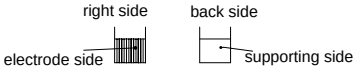


5.1.2 FINAL ASSEMBLY <M2>

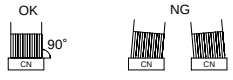


NOTE

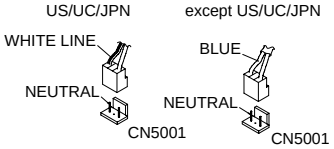
1. Insert direction of FCC WIRE as follows.



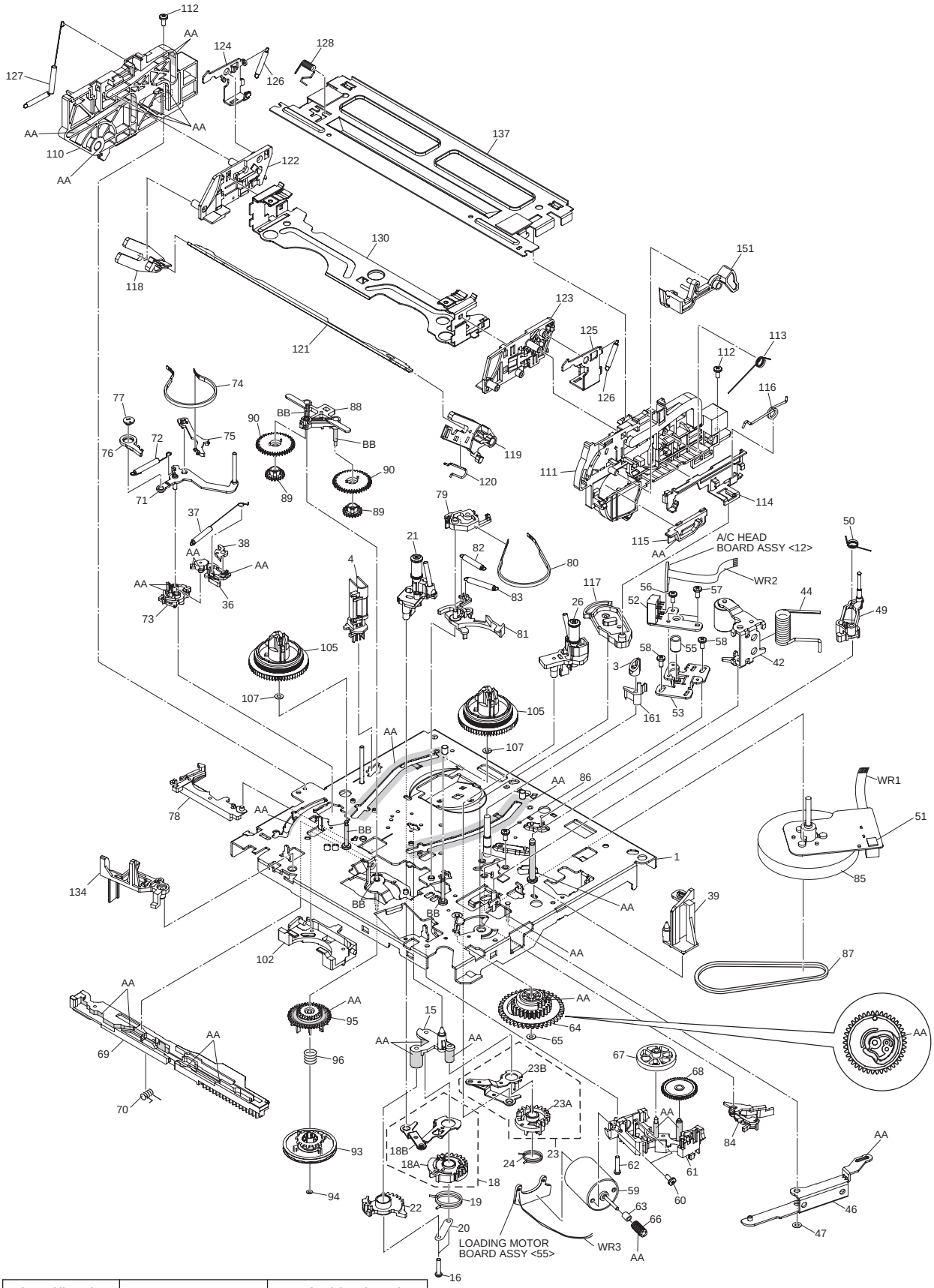
2. FFC WIRE and DRUM FPC WIRE should be insert as follows.



3. Insert direction of POWER CORD.



5.1.3 MECHANISM ASSEMBLY <M4>



Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	COSMO-HV56	BB

NOTE: The section marked in **AA** and **BB** indicate lubrication and greasing areas.

5.2 PARTS LIST

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
**********				
			PACKING AND ACCESSORY ASSEMBLY <M1>	
		301	LP31255-001A	PACKING CASE
		302	LP31247-001A	CUSHION ASSY
		303	LP41038-002A	POLY BAG
		306	LP20878-018B	REMOTE CTL UNIT
		306A	LP40610-003A	COVER(BATTERY)
		307	R6PRPA-2ST	BATTERY,X2
		308	QPC02202230P	POLY BAG,CABLE
	⚠	309	PECA0903	LI BATTERY
	⚠	310	LPT0796-001A	INST.BOOK(ENGLISH)
	⚠	310	LPT0796-002A	INST.BOOK(CHINESE)
		311	QPC02503530P	POLY BAG,INST
		312	PEAC0348-02	RF CABLE
		320	LP41078-001A	POLYBAG,FOR P/CORD
**********				
			FINAL ASSEMBLY <M2>	
	⚠	501	LP10452-039A	F.PANEL ASSY
		501A	LP21123-014A	CASSETTE DOOR
		501B	PQ46448	TOR.SPRING
		501D	LP21129-007A	WINDOW(2)
		501E	LP31142-023A	DOOR(JACK)
		501F	LP30877-008A	COVER(R)
		501G	LP41064-003A	STICKER
		502	PQ43013-7	FOOT,X2
	⚠	503	LP10013-045C	TOP COVER
		504	QYTDSF3010R	TAP SCREW,X2,SIDE
		505	QYTDSF3010M	TAP SCREW,REAR
		508	QYSPSPD3008Z	SCREW,X3,DRUM
		510	PDV2539A	DRUM FINAL ASSY,OL-D00747
		511	QYSPSFG3010Z	TAP SCREW,X2,FOR MECHA
		512	QYTDSF4012Z	TAP SCREW,X2,FOR MECHA
	⚠	514	QMPK070-170-JC	POWER CORD
	⚠	515	LP10108-009K	BOTTOM CHASSIS
		530	LP40910-002E	H.CLEANER ASSY
		530A	PQ46419-2	CLEANER
	⚠	535	QAM0001-001	CONVERSION PLUG
		536	LP30336-001A	CAP
**********				
			MECHANISM ASSEMBLY <M4>	
		1	LP21039-001V	MAIN DECK ASSY
		3	LP40097-002E	GUIDE POLE CAP
		4	NAH0004-001	FULL ERASE HEAD
		15	LP30958-001B	LOAD.GEAR BASE
		16	QYTPST2620Z	TAP SCREW,X2,L.G.BASE
		18	LP40798-001A	LOAD.GEAR(SUPPLY) ASSY
		18A	LP21040-001A	LOAD.GEAR(SUPPLY)
		18B	LP40799-001A	LOAD.ARM(SUPPLY) ASSY
		19	LP40837-001A	TORSION SPRING(S),L.GEAR(S)
		20	LP40903-002B	FIXING PLATE
		21	LP40806-001D	POLE BASE ASSY(SUPPLY)
		22	LP30959-002B	LOAD GEAR
		23	LP40802-001C	LOAD.GEAR(TAKE UP) ASSY
		23A	LP21041-001D	LOAD.GEAR(TAKE UP)
		23B	LP40803-001A	LOAD.ARM(TAKE UP) ASSY
		24	LP40838-001A	TORSION SPRING(T),L.GEAR(T)
		26	LP40808-001E	POLE BASE ASSY(TAKE UP)
		36	LP21055-001G	TU LEVER
		37	LP40943-001A	TENSION SPRING
		38	LP40859-001D	T-UP HEAD
		39	LP30961-001C	LID GUIDE
		42	LP40810-001B	PINCH ROLLER ARM ASSY
		44	LP40840-001D	TORSION SPRING,P.ROLLER
		46	LP30963-001C	PRESS LEVER
		47	PQM30017-24	SLIT WASHER,P.LEVER
		49	LP40813-001D	GUIDE ARM ASSY
		50	LP40841-001A	TORSION SPRING,G.ARM
		51	LP30002-090A	SPACER,CAPSTAN MOTOR
		52	NAH0003-001	AC HEAD
		53	LP30965-001A	HEAD BASE
		55	LP40842-001D	COMPRESSION SPRING
		56	QYTDST2006M	TAP SCREW,A/C HEAD
		57	LP41036-001A	A/C ADJ.SCREW,X2,A/C HEAD
		58	QYTDST2606Z	TAP SCREW,X2,A/C HEAD
		59	QAR0289-001	LOADING MOTOR
		60	QYTPSP3003Z	SCREW,X2,L.MOTOR
		61	LP21056-002J	MOTOR BRACKET
		62	QYTPST2620Z	TAP SCREW,M.BKT
		63	LP40814-001B	WORM BEARING
		64	LP21044-001E	CONTROL CAM
		65	PQM30017-24	SLIT WASHER,CTL.CAM
		66	LP40815-001A	WORM GEAR
		67	LP40816-001B	HELICAL GEAR,M.BKT
		68	LP40817-001A	CONNECT GEAR
		69	LP10400-001J	CONTROL PLATE
		70	LP40843-001A	TORSION SPRING
		71	LP40818-001B	TENSION ARM ASSY
		72	LP40844-001E	TENSION SPRING,T.ARM
		73	LP21045-001D	TENSION ARM BASE
		74	LP40821-001A	TENSION BAND ASSY
		75	LP30967-001B	BAND HOLDER-1
		76	LP30968-001C	BAND HOLDER-2
		77	LP40822-002B	ADJUST PIN
		78	LP31000-005E	TENSION ARM LEVER
		79	LP21046-001C	MAIN BRAKE(TAKE UP)
		80	LP40824-001A	BAND BRAKE ASSY
		81	LP30969-002B	BRAKE LEVER
		82	LP30003-033B	TENSION SPRING,BRK LEVER
		83	LP30003-035B	TENSION SPRING,BRK LEVER
		84	LP40825-001B	CAPSTAN BRAKE ASSY
	⚠	85	QAR0267-002	CAPSTAN MOTOR
		86	QYTPSG2606Z	TAP SCREW,X3,CAP.MOTOR
		87	LP30005-010A	BELT,CAPSTAN MOTOR
		88	LP30970-001A	IDLER ARM
		89	LP40828-004A	IDLER GEAR 1,X2
		90	LP40829-002A	IDLER GEAR 2,X2
		93	LP40934-001B	CLUTCH UNIT
		94	PQM30017-47	SLIT WASHER,CLUT.UNIT
		95	LP30973-001A	DIRECT GEAR
		96	LP40939-001A	COMPRESION SPRING,DIR.GEAR
		102	LP30974-001C	CHANGE LEVER
		105	LP21049-001A	REEL DISK,X2
		107	LP30017-004A	SPACER,X2,REEL DISK
		110	LP10401-001H	SIDE FRAME(L)

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		111	LP10402-001K	SIDE FRAME(R)
		112	QYTDST2606Z	TAP SCREW,X2,FOR MECHA
		113	LP40917-001D	TORSION SPRING,FOR DUMP.
		114	LP30976-001E	SIDE PLATE
		115	LP30977-002D	LIMIT PLATE
		116	LP40846-001C	LIMIT SPRING,SIDE PLATE
		117	LP31100-001B	DRIVE LEVER
		118	LP30978-001B	DRIVE ARM(L)
		119	LP30979-001P	DRIVE ARM(R)
		120	LP40847-001B	TORSION SPRING,D.ARM(R)
		121	LP30980-001E	CONNECT PLATE
		122	LP10403-001C	SIDE HOLDER(L)
		123	LP10404-001E	SIDE HOLDER(R)
		124	LP30983-001B	LOCK LEVER(L)
		125	LP30984-001B	LOCK LEVER(R)
		126	LP40924-001D	TENSION SPRING,X2,L.LEVER
		127	LP40972-001A	EARTH SPRING(1)
		128	LP40857-001B	EARTH SPRING(2),TOP FRAME
		130	LP30981-001G	CASSETTE HOLDER ASSY
		134	LP21051-002C	REC SAFETY LEVER
		137	LP21052-001K	TOP FRAME
		151	LP30985-002J	DOOR OPENER,SIDE FRM(R)
		161	LP40993-001A	TAPE GUIDE
		WR1	WJT0059-001D	E-CARD WIRE,CAP MOTOR
		WR2	WJT0067-001B	E-CARD WIRE,A/C HEAD
		WR3	WJS0022-001A	E-FL/RB WIRE,L.MOTOR

****

MAIN BOARD ASSEMBLY <03>

		PW1	LPA10212-05B	MAIN BOARD ASSY,V16PV
		IC1	JCP8060-MSA	IC
		IC2201	AN3651FBP	IC
		IC3001	HD6432199RA90F	IC(MCU),MAIN CPU
		IC3001	or HD64F2199RFA90	IC(MCU),MAIN CPU
		IC3002	IC-PST3427U-X	IC,RESET
		IC3002	or S-80827CNNB-X	IC,RESET
		IC3003	(REFER TO BELOW)*	IC,EEPROM
		IC6701	MSP3417D-X	IC,DEMOD IC
		IC6701	or MSP3417DG3-X	IC
		IC6701	or MSP3417G-X	IC
		IC6701	or MSP3417GQGB8V3X	IC
		IC7002	GP1UM291QK	IR DETECT UNIT
		Q7	2SC4081/QRS/-X	TRANSISTOR,SP2 SHORT
		Q7	or 2PC4081/R/-X	TRANSISTOR,SP2 SHORT
		Q7	or 2SD1819A/QRS/-X	TRANSISTOR,SP2 SHORT
		Q8	2SC4081/QRS/-X	TRANSISTOR,SP1 SHORT
		Q8	or 2PC4081/R/-X	TRANSISTOR,SP1 SHORT
		Q8	or 2SD1819A/QRS/-X	TRANSISTOR,SP1 SHORT
		Q9	2SC4081/QRS/-X	TRANSISTOR,EP2 SHORT
		Q9	or 2PC4081/R/-X	TRANSISTOR,EP2 SHORT
		Q9	or 2SD1819A/QRS/-X	TRANSISTOR,EP2 SHORT
		Q10	2SC4081/QRS/-X	TRANSISTOR,EP1 SHORT
		Q10	or 2PC4081/R/-X	TRANSISTOR,EP1 SHORT
		Q10	or 2SD1819A/QRS/-X	TRANSISTOR,EP1 SHORT
		Q12	2SA1576A/QR/-X	TRANSISTOR,2FSC BUFF
		Q12	or 2SB1218A/QR/-X	TRANSISTOR,2FSC BUFF
		Q12	or 2PA1576/R/-X	TRANSISTOR,2FSC BUFF
		Q2001	2SC4081/QRS/-X	TRANSISTOR
		Q2001	or 2SD1819A/QRS/-X	TRANSISTOR
		Q2001	or 2PC4081/R/-X	TRANSISTOR
		Q2002	2SC4081/QRS/-X	TRANSISTOR
		Q2002	or 2SD1819A/QRS/-X	TRANSISTOR
		Q2002	or 2PC4081/R/-X	TRANSISTOR
		Q2003	DTA144WUA-X	DIGI TRANSISTOR
		Q2003	or UN511E-X	DIGI TRANSISTOR
		Q2003	or RN2309-X	D TRANSISTOR
		Q2003	or PDTA144WU-X	DIGI TRANSISTOR
		Q2051	2SC4081/QRS/-X	TRANSISTOR
		Q2051	or 2SD1819A/QRS/-X	TRANSISTOR
		Q2051	or 2PC4081/R/-X	TRANSISTOR
		Q2052	2SA1576A/QR/-X	TRANSISTOR
		Q2052	or 2SB1218A/QR/-X	TRANSISTOR
		Q2052	or 2PA1576/R/-X	TRANSISTOR
		Q2053	DTC144WUA-X	DIGI TRANSISTOR
		Q2053	or UN521E-X	DIGI TRANSISTOR
		Q2053	or RN1309-X	DIGI TRANSISTOR
		Q2053	or PDTC144WU-X	DIGI TRANSISTOR
		Q2054	2SA1576A/QR/-X	TRANSISTOR
		Q2054	or 2SB1218A/QR/-X	TRANSISTOR
		Q2054	or 2PA1576/R/-X	TRANSISTOR
		Q2055	DTC144WUA-X	DIGI TRANSISTOR
		Q2055	or UN521E-X	DIGI TRANSISTOR
		Q2055	or RN1309-X	DIGI TRANSISTOR
		Q2055	or PDTC144WU-X	DIGI TRANSISTOR
		Q2201	DTA144WUA-X	DIGI TRANSISTOR
		Q2201	or PDTA144WU-X	DIGI TRANSISTOR
		Q2201	or UN511E-X	DIGI TRANSISTOR
		Q2201	or RN2309-X	D TRANSISTOR
		Q2202	DTC144WUA-X	DIGI TRANSISTOR
		Q2202	or PDTC144WU-X	DIGI TRANSISTOR
		Q2202	or UN521E-X	DIGI TRANSISTOR
		Q2202	or RN1309-X	DIGI TRANSISTOR
		Q2203	2SC4081/QRS/-X	TRANSISTOR
		Q2203	or 2PC4081/R/-X	TRANSISTOR
		Q2203	or 2SD1819A/QRS/-X	TRANSISTOR
		Q2204	2SC4081/QRS/-X	TRANSISTOR
		Q2204	or 2PC4081/R/-X	TRANSISTOR
		Q2204	or 2SD1819A/QRS/-X	TRANSISTOR
		Q2255	DTC114EUA-X	DIGI TRANSISTOR
		Q2255	or PDTC114EU-X	DIGI TRANSISTOR
		Q2255	or UN5211-X	DIGI TRANSISTOR
		Q2255	or RN1302-X	DIGI TRANSISTOR
		Q3003	PTZ-NV16A	IC(PHOTO SENSOR,END SENSOR
		Q3004	2SD1819A/QRS/-X	TRANSISTOR,POWER DET
		Q3004	or 2SC4081/QRS/-X	TRANSISTOR,POWER DET
		Q3004	or 2PC4081/R/-X	TRANSISTOR,POWER DET
		Q3005	2SD1819A/QRS/-X	TRANSISTOR,SVCC
		Q3005	or 2SC4081/QRS/-X	TRANSISTOR,SVCC
		Q3005	or 2PC4081/R/-X	TRANSISTOR,SVCC
		Q4001	UN5211-X	DIGI TRANSISTOR
		Q4001	or DTC114EUA-X	DIGI TRANSISTOR
		Q4001	or PDTC114EU-X	DIGI TRANSISTOR
		Q4001	or RN1302-X	DIGI TRANSISTOR
		Q5101	2SK2632-CB14	POWER MOS FET
		Q5101	or 2SK2129-LT	POWER MOS FET
		Q5101	or 2SK2632	POWER MOS FET
		Q5101	or 2SK2129	POWER MOS FET
		Q5102	2SD2144S/UV/-T	TRANSISTOR
		Q5301	2SC1740S/RS/-T	TRANSISTOR
		Q5301	or 2SC3199/YG/-T	TRANSISTOR

* HR-J798AH : LPN0814-003C-03 The VCR goes to jig RCU mode after replacing the EEPROM and the VCR does not accept some RCU command. Therefore please set the VCR to the user RCU mode after replacing the EEPROM. The method of setting the VCR to the user RCU mode is written on the service manual.

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	⚠	Q5304	2SD2144S/UV/-T	TRANSISTOR,SW12V
		Q5305	DTA114EUA-X	DIGI TRANSISTOR,SW12V
		Q5305	or UN5111-X	DIGI TRANSISTOR,SW12V
		Q5305	or RN2302-X	D TRANSISTOR,SW12V
		Q5305	or PDTA114EU-X	DIGI TRANSISTOR,SW12V
		Q5306	DTC114EUA-X	DIGI TRANSISTOR,SW12V
		Q5306	or UN5211-X	DIGI TRANSISTOR,SW12V
		Q5306	or RN1302-X	DIGI TRANSISTOR,SW12V
		Q5306	or PDTC114EU-X	DIGI TRANSISTOR,SW12V
		Q5307	2SD2144S/UV/-T	TRANSISTOR,RF5V
	⚠	Q5321	2SD1858/QR/-T	TRANSISTOR,SW5V
		Q6030	2SB1218A/RS/-X	TRANSISTOR,V_BUFFER
		Q6031	DTC114EUA-X	DIGI TRANSISTOR,V_MUTE
		Q6031	or UN5211-X	DIGI TRANSISTOR
		Q6031	or RN1302-X	DIGI TRANSISTOR
		Q6031	or PDTC114EU-X	DIGI TRANSISTOR
		Q6032	DTC114EUA-X	DIGI TRANSISTOR,A_MUTE
		Q6032	or UN5211-X	DIGI TRANSISTOR
		Q6032	or RN1302-X	DIGI TRANSISTOR
		Q6032	or PDTC114EU-X	DIGI TRANSISTOR
		Q6701	2SC3936/BC/-X	TRANSISTOR,PRE AMP
		Q7001	DTA143TUA-X	DIGI TRANSISTOR
		Q7002	DTA143TUA-X	DIGI TRANSISTOR
		Q7003	DTA143TUA-X	DIGI TRANSISTOR
		Q7004	DTA143TUA-X	DIGI TRANSISTOR
		Q7005	DTA143TUA-X	DIGI TRANSISTOR
		Q7008	DTC143TUA-X	DIGI TRANSISTOR
		Q7008	or UN5216-X	D TRANSISTOR
		Q7009	DTC143TUA-X	DIGI TRANSISTOR
		Q7009	or UN5216-X	D TRANSISTOR
		Q7010	DTC143TUA-X	DIGI TRANSISTOR
		Q7010	or UN5216-X	D TRANSISTOR
		Q7011	DTC143TUA-X	DIGI TRANSISTOR
		Q7011	or UN5216-X	D TRANSISTOR
		Q7012	DTC143TUA-X	DIGI TRANSISTOR
		Q7012	or UN5216-X	D TRANSISTOR
		Q7013	DTC143TUA-X	DIGI TRANSISTOR
		Q7013	or UN5216-X	D TRANSISTOR
		Q7014	DTC143TUA-X	DIGI TRANSISTOR
		Q7014	or UN5216-X	D TRANSISTOR
		Q7106	2SB1218A/QR/-X	TRANSISTOR
		Q7106	or 2SA1576A/QR/-X	TRANSISTOR
		Q7106	or 2PA1576/R/-X	TRANSISTOR
		D201	1SS133-T2	SI DIODE
		D2001	1SS133-T2	SI DIODE
		D2001	or 1SS270A-T2	SI DIODE
		D2251	1SS133-T2	SI DIODE
		D2251	or 1SS270A-T2	SI DIODE
		D3001	LNB2301L01VI	IR LED,LED
		D3002	1SS133-T2	SI DIODE,PROTECT
		D3002	or 1SS270A-T2	SI DIODE,PROTECT
		D3003	RD39ES/B3/-T2	Z DIODE,POWER DET
		D3003	or MTZJ39C-T2	Z DIODE,POWER DET
		D3004	11ES2-T2	SI DIODE,BU5V
		D3004	or 1A3G-T2	SI DIODE,BU5V
	⚠	D3005	11ES2-T2	SI DIODE,AL5V
	⚠	D3005	or 1A3G-T2	SI DIODE,AL5V
	⚠	D3007	RB721Q-40-T2	SB DIODE,LITH
		D5001	S1WB/A/60-4102	BRIDGE DIODE
		D5001	or S1WB/A/60-X	BRIDGE DIODE
		D5001	or S1WB(A)60F4072X	BRIDGE DIODE

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		D5101	AU01-T2	SI DIODE	
		D5101	or 1SR153-400-T2	FR DIODE	
		D5101	or ERA18-04-T2	FR DIODE	
		D5101	or 10ELS4-T2	FR DIODE	
		D5102	AU01-T2	SI DIODE	
		D5102	or 1SR153-400-T2	FR DIODE	
		D5102	or ERA18-04-T2	FR DIODE	
		D5102	or 10ELS4-T2	FR DIODE	
		D5103	1SS133-T2	SI DIODE	
		D5103	or 1SS270A-T2	SI DIODE	
		D5105	1SS133-T2	SI DIODE	
		D5105	or 1SS270A-T2	SI DIODE	
		D5203	AU01Z-T2	FR DIODE	
		D5203	or 10ELS2-T2	FR DIODE	
		D5204	AU01Z-T2	FR DIODE	
		D5204	or 10ELS2-T2	FR DIODE	
	⚠	D5207	AK04-T2	SB DIODE,6V	
	⚠	D5207	or 11EQS04-T2	SB DIODE,6V	
	⚠	D5207	or 1S4-T2	SB DIODE,6V	
	⚠	D5207	or SBO40-T2	SB DIODE,6V	
	⚠	D5209	AK04-T2	SB DIODE,6V	
	⚠	D5209	or 11EQS04-T2	SB DIODE,6V	
	⚠	D5209	or 1S4-T2	SB DIODE,6V	
	⚠	D5209	or SBO40-T2	SB DIODE,6V	
		D5210	AU01Z-T2	FR DIODE,BT2	
		D5210	or ERA18-02-T2	FR DIODE,BT2	
		D5210	or 1SR153-400-T2	FR DIODE,BT2	
		D5210	or 10ELS2-T2	FR DIODE,BT2	
		D5210	or PG104RS-T2	FR DIODE,BT2	
		D5301	MTZJ15C-T2	Z DIODE,OVERVOLT	
		D5301	or RD15ES/B3/-T2	Z DIODE,OVERVOLT	
		D5302	MTZJ11C-T2	Z DIODE,SW12V	
		D5302	or RD11ES/B3/-T2	Z DIODE,SW12V	
		D5303	MTZJ5.6A-T2	Z DIODE,AL5.8V	
		D5303	or RD5.6ES/B1/-T2	Z DIODE,AL5.8V	
		D5305	MTZJ5.6C-T2	Z DIODE,SW5V	
		D5305	or RD5.6ES/B3/-T2	Z DIODE,SW5V	
		D6002	HZ30-2L-T2	Z.DIODE,TU30V	
		D6002	or HZ30-2LTD	Z DIODE (M)	
		D6701	1SS133-T2	SI DIODE,RESET	
		D6701	or 1SS270A-T2	SI DIODE	
		R1	NRSA02J-622X	MG RESISTOR	6.2kΩ,1/10W
		R2	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R3	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R11	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R12	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R21	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R22	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R31	NRSA02J-471X	MG RESISTOR	470Ω1/10W
		R36	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R37	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R201	NRSA02J-471X	MG RESISTOR	470Ω1/10W
		R202	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R203	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R204	NRSA02J-474X	MG RESISTOR	470kΩ,1/10W
		R205	NRSA02J-301X	MG RESISTOR	300Ω,1/10W
		R208	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R209	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R210	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R214	NRSA02J-474X	MG RESISTOR	470kΩ,1/10W
		R2003	NRSA02J-101X	MG RESISTOR	100Ω,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R2005	QRE141J-153Y	C RESISTOR	15kΩ,1/4W
		R2007	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2008	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2010	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2013	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2014	NRSA02J-394X	MG RESISTOR	390kΩ,1/10W
		R2015	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R2016	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R2017	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2018	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2019	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2021	NRSA02J-333X	MG RESISTOR	33kΩ,1/10W
		R2022	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2023	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2024	QRE141J-103Y	C RESISTOR	10kΩ,1/4W
		R2053	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2054	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2055	NRSA02J-3R3X	MG RESISTOR	3.3Ω,1/10W
		R2056	QRE141J-820Y	C RESISTOR	82Ω,1/4W
		R2057	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2058	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2059	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2060	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2201	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2202	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2203	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2204	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2205	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2206	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2207	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2208	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2209	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R2210	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2211	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R2212	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R2213	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2214	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R2215	QRE141J-181Y	C RESISTOR	180Ω,1/4W
		R2216	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R2217	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2218	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R2219	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R2220	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2222	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2223	NRSA02J-511X	MG RESISTOR	510Ω,1/10W
		R2224	NRSA02J-511X	MG RESISTOR	510Ω,1/10W
		R2225	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2226	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R2227	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R2228	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R2229	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R2230	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2231	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2232	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2233	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2234	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R2251	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2252	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R2253	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R2255	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R3024	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R3025	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3028	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3030	QRE121J-102Y	C RESISTOR	1kΩ,1/2W
		R3031	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3033	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3034	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3035	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3038	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3039	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3046	QUY160-100Y	IM BUS WIRE	
		R3047	QUY160-100Y	IM BUS WIRE	
		R3048	QUY160-100Y	IM BUS WIRE	
		R3049	QUY160-100Y	IM BUS WIRE	
		R3050	QUY160-100Y	IM BUS WIRE	
		R3051	QUY160-100Y	IM BUS WIRE	
		R3052	QUY160-100Y	IM BUS WIRE	
		R3054	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3058	QUY160-100Y	IM BUS WIRE	
		R3059	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R3060	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R3061	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R3062	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R3063	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3064	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3065	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3066	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3067	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3069	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3072	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3073	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3074	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3077	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3080	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R3082	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3085	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3088	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3091	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3092	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3098	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3102	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3205	NRSA02J-181X	MG RESISTOR	180Ω,1/10W
		R3207	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R3208	NRSA02J-121X	MG RESISTOR	120Ω,1/10W
		R3209	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R3210	NRSA02J-121X	MG RESISTOR	120Ω,1/10W
		R3211	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R3212	NRSA02J-474X	MG RESISTOR	470kΩ,1/10W
		R3213	NRSA02J-334X	MG RESISTOR	330kΩ,1/10W
		R3214	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3215	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3216	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3217	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3218	QRE141J-472Y	C RESISTOR	4.7kΩ,1/4W
		R3219	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3220	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
		R3222	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3223	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R3224	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R3225	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3229	NRSA02J-105X	MG RESISTOR	1MΩ,1/10W
		R3235	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R3236	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R3246	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3248	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3253	QRE141J-103Y	C RESISTOR	10kΩ,1/4W
	⚠	R3256	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4003	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R4004	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R4005	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R4007	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4009	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4012	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R4015	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R4017	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5101	QRE141J-224Y	C RESISTOR	220kΩ,1/4W
		R5102	QRE141J-224Y	C RESISTOR	220kΩ,1/4W
		R5103	QRE141J-683Y	C RESISTOR	68kΩ,1/4W
		R5104	QRG02GJ-683	OMF RESISTOR	68kΩ,2W
		R5106	QRT01DJ-R39X	MF RESISTOR	0.39Ω,1W
		R5107	QRE121J-331Y	C RESISTOR	330Ω,1/2W
		R5108	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R5109	QRE141J-561Y	C RESISTOR	560Ω,1/4W
		R5110	NRSA02J-224X	MG RESISTOR	220kΩ,1/10W
		R5111	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5112	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R5302	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5303	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R5304	QRE141J-471Y	C RESISTOR	470Ω,1/4W
		R5306	NRSA02J-181X	MG RESISTOR	180Ω,1/10W
		R5310	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R5312	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5313	NRSA02J-821X	MG RESISTOR	820Ω,1/10W
		R5319	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R5332	QRL02DJ-391X	OMF RESISTOR	390Ω,2W
		R6020	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6021	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6030	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6031	NRSA02J-271X	MG RESISTOR	270Ω,1/10W
		R6032	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6050	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R6051	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R6052	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R6080	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6056	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R6701	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
		R6702	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R6703	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6704	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6705	NRSA02J-271X	MG RESISTOR	270Ω,1/10W
		R6707	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6708	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R6709	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6710	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6711	QRE141J-104Y	C RESISTOR	100kΩ,1/4W
		R6712	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6713	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R6714	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6715	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R6716	QRE141J-470Y	C RESISTOR	47Ω,1/4W
		R6719	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R6720	QRE141J-562Y	C RESISTOR	5.6kΩ,1/4W
		R6721	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R7002	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7003	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7004	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7005	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7006	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7007	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7008	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7015	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R7020	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R7021	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R7022	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R7023	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R7024	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R7025	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R7026	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R7030	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R7031	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R7032	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R7033	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R7121	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R7122	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R7123	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R7131	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R7132	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R7133	QRE141J-331Y	C RESISTOR	330Ω,1/4W
		R7134	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R7151	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R7152	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R7153	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R7160	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7161	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R7162	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7163	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		VR2251	QUY153-050Y	IM BUS WIRE	
		B1	NRSA02J-0R0X	MG RESISTOR,V OUT(V)	0Ω,1/10W
		B201	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B2003	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B3003	NRSA02J-0R0X	MG RESISTOR,ESD	0Ω,1/10W
		B5001	QUY160-100Y	IM BUS WIRE,OPT:LF5001	
		B5002	QUY160-100Y	IM BUS WIRE,OPT:LF5001	
		B6051	NRSA02J-0R0X	MG RESISTOR,RF5V	0Ω,1/10W
		B7102	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B7105	QUY160-100Y	IM BUS WIRE	
		B7108	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B7113	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B7114	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		C1	NDC21HJ-151X	C CAPACITOR	150pF,50V
		C2	NDC21HJ-470X	C CAPACITOR	47pF,50V
		C4	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
		C5	NCB21EK-104X	C CAPACITOR	0.1µF,25V
		C6	NCB21EK-104X	C CAPACITOR	0.1µF,25V
		C7	NCB21EK-104X	C CAPACITOR	0.1µF,25V
		C8	QEKJ1HM-105Z	E CAPACITOR	1µF,50V
		C9	QEKJ1HM-225Z	E CAPACITOR	2.2µF,50V
		C10	QEKJ0JM-476Z	E CAPACITOR	47µF,6.3V
		C11	QEPF1HM-105Z	BP E CAPACITOR	1µF,50V
		C13	QEKJ1HM-105Z	E CAPACITOR	1µF,50V
		C14	QEKJ1HM-105Z	E CAPACITOR	1µF,50V
		C15	NCB21EK-104X	C CAPACITOR	0.1µF,25V
		C17	NCB21EK-104X	C CAPACITOR	0.1µF,25V
		C19	NCB21EK-104X	C CAPACITOR	0.1µF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C20	NCB21EK-104X	C CAPACITOR	0.1µF,25V
C22	NCB21EK-104X	C CAPACITOR	0.1µF,25V
C24	NCB21EK-104X	C CAPACITOR	0.1µF,25V
C25	QEKJ1HM-335Z	E CAPACITOR	3.3µF,50V
C26	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
C27	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C30	NCB21HK-331X	C CAPACITOR	330pF,50V
C31	QEKJ0JM-476Z	E CAPACITOR	47µF,6.3V
C32	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C33	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
C34	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C35	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C36	QEKJ1HM-105Z	E CAPACITOR	1µF,50V
C37	NDC21HJ-4R0X	C CAPACITOR	4pF,50V
C38	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C39	QEKJ0JM-476Z	E CAPACITOR	47µF,6.3V
C40	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C41	NCB21EK-104X	C CAPACITOR	0.1µF,25V
C43	QEKJ1HM-335Z	E CAPACITOR	3.3µF,50V
C44	QEKJ1HM-225Z	E CAPACITOR	2.2µF,50V
C45	NCB21HK-472X	C CAPACITOR	0.0047µF,50V
C46	NCB21EK-104X	C CAPACITOR	0.1µF,25V
C47	QEKJ1HM-474Z	E CAPACITOR	0.47µF,50V
C48	NCB21EK-223X	C CAPACITOR	0.022µF,25V
C49	QEKJ1HM-475Z	E CAPACITOR	4.7µF,25V
C55	NDC21HJ-151X	C CAPACITOR	150pF,50V
C56	NCB21EK-104X	C CAPACITOR	0.1µF,25V
C57	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C58	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C59	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C60	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C61	QEKC0JM-476Z	E CAPACITOR	47µF,6.3V
C62	QCBB1HK-103Y	C CAPACITOR	0.01µF,50V
C63	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C64	QCBB1HK-103Y	C CAPACITOR	0.01µF,50V
C71	QEKJ1HM-105Z	E CAPACITOR	1µF,50V
C201	NDC21HJ-220X	C CAPACITOR	22pF,50V
C202	QERF1EM-475Z	E CAPACITOR	4.7µF,25V
C203	NCB21HK-102X	C CAPACITOR	0.001µF,50V
C204	NCB21HK-681X	C CAPACITOR	680pF,50V
C205	QEKJ1HM-475Z	E CAPACITOR	4.7µF,25V
C207	QEKJ1HM-475Z	E CAPACITOR	4.7µF,25V
C209	QEKJ0JM-476Z	E CAPACITOR	47µF,6.3V
C210	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C212	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C213	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C2001	QEKJ1HM-475Z	E CAPACITOR	4.7µF,25V
C2002	QEKJ1HM-105Z	E CAPACITOR	1µF,50V
C2003	QEKJ0JM-476Z	E CAPACITOR	47µF,6.3V
C2005	QEKJ1HM-475Z	E CAPACITOR	4.7µF,25V
C2006	NCB21HK-682X	C CAPACITOR	0.0068µF,50V
C2007	QEKJ1CM-226Z	E CAPACITOR	22µF,16V
C2008	QEKJ1HM-475Z	E CAPACITOR	4.7µF,25V
C2009	NCB21HK-122X	C CAPACITOR	0.0012µF,50V
C2010	NCB21HK-152X	C CAPACITOR	0.0015µF,50V
C2011	QEKJ1HM-475Z	E CAPACITOR	4.7µF,25V
C2012	QEKC1HM-475Z	E CAPACITOR	4.7µF,50V
C2051	NCB21HK-331X	C CAPACITOR	330pF,50V
C2052	QFLC1HJ-823Z	M CAPACITOR	0.082µF,50V
C2053	NCB21HK-472X	C CAPACITOR	0.0047µF,50V
C2054	NCB21EK-223X	C CAPACITOR	0.022µF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C2055	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
C2201	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
C2202	QEKJ1HM-475Z	E CAPACITOR	4.7µF,25V
C2203	QEKJ1HM-475Z	E CAPACITOR	4.7µF,25V
C2204	QEKJ0JM-336Z	E CAPACITOR	33µF,6.3V
C2205	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
C2206	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
C2207	NCB21HK-153X	C CAPACITOR	0.015µF,50V
C2208	NCB21HK-153X	C CAPACITOR	0.015µF,50V
C2209	QERF1CM-106Z	E CAPACITOR	10µF,16V
C2210	QERF1CM-106Z	E CAPACITOR	10µF,16V
C2211	QEKJ0JM-336Z	E CAPACITOR	33µF,6.3V
C2212	QEKJ0JM-476Z	E CAPACITOR	47µF,6.3V
C2214	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
C2215	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
C2216	QEKJ1CM-476Z	E CAPACITOR	47µF,16V
C2218	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
C2219	QEKJ1CM-226Z	E CAPACITOR	22µF,16V
C2220	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
C2221	NCB21EK-223X	C CAPACITOR	0.022µF,25V
C2222	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C2223	NCB21EK-473X	C CAPACITOR	0.047µF,25V
C2224	NCB21EK-473X	C CAPACITOR	0.047µF,25V
C2227	QERF1CM-106Z	E CAPACITOR	10µF,16V
C2232	NDC21HJ-101X	C CAPACITOR	100pF,50V
C2233	NDC21HJ-101X	C CAPACITOR	100pF,50V
C2233	NDC21HJ-101C	C CAPACITOR	100pF,50V
C2233	NDC31HJ-101C	C CAPACITOR	100pF,50V
C2251	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C2252	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C2253	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C2254	QEKJ0JM-476Z	E CAPACITOR	47µF,6.3V
C2255	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C2256	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C2257	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C2258	NDC21HJ-181X	C CAPACITOR	180pF,50V
C2259	QEKJ1HM-334Z	E CAPACITOR	0.33µF,50V
C3072	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C3004	NCB21EK-473X	C CAPACITOR	0.047µF,25V
C3011	QETN0JM-108Z	E CAPACITOR	1000µF,6.3V
C3012	QEKJ0JM-476Z	E CAPACITOR	47µF,6.3V
C3013	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C3014	QERF0JM-476Z	E CAPACITOR	47µF,6.3V
C3016	NCB21EK-473X	C CAPACITOR	0.047µF,25V
C3022	NCB21EK-473X	C CAPACITOR	0.047µF,25V
C3024	NDC21HJ-120X	C CAPACITOR	12pF,50V
C3025	QAT3725-300Z	TRIM CAPACITOR	
C3030	QEKJ0JM-476Z	E CAPACITOR	47µF,6.3V
C3031	NCB21EK-473X	C CAPACITOR	0.047µF,25V
C3033	NCB21EK-473X	C CAPACITOR	0.047µF,25V
C3036	NDC21HJ-180X	C CAPACITOR	18pF,50V
C3037	NDC21HJ-120X	C CAPACITOR	12pF,50V
C3045	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C3050	NCF21EZ-104X	C CAPACITOR	0.1µF,25V
C3051	NCB21EK-104X	C CAPACITOR	0.1µF,25V
C3052	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
C3054	NCB21HK-222X	C CAPACITOR	0.0022µF,50V
C3056	NCB21EK-104X	C CAPACITOR	0.1µF,25V
C3057	NCB21HK-103X	C CAPACITOR	0.01µF,50V
C3071	QEKJ1CM-336Z	E CAPACITOR	33µF,16V
C4002	NCB21HK-103X	C CAPACITOR	0.01µF,50V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C4003	NCB21HK-102X	C CAPACITOR	0.001µF,50V
		C4004	QERF1CM-226Z	E CAPACITOR	22µF,16V
		C4005	NCB21HK-222X	C CAPACITOR	0.0022µF,50V
		C4006	QERF0JM-476Z	E CAPACITOR	47µF,6.3V
		C4008	QEQF1HM-105Z	BP E CAPACITOR	1µF,50V
		C4009	NCB21HK-563X	C CAPACITOR	0.056µF,50V
		C4010	NCB21EK-223X	C CAPACITOR	0.022µF,25V
		C4011	NCB21EK-104X	C CAPACITOR	0.1µF,25V
		C4012	QERF1HM-105Z	E CAPACITOR	1µF,50V
		C4014	NDC21HJ-101X	C CAPACITOR	100pF,50V
		C4015	NCB21HK-102X	C CAPACITOR	0.001µF,50V
		C4016	NDC21HJ-101X	C CAPACITOR	100pF,50V
		C4031	QEKJ1CM-336Z	E CAPACITOR	33µF,16V
	⚠	C5001	QFZ9072-473	MM CAPACITOR	0.047µF,125V
	⚠	C5004	QCZ9071-222	C CAPACITOR	0.0022µF,250V
		C5006	QEZ0375-686	E CAPACITOR	68µF,400V
		C5101	QCZ0212-472	C CAPACITOR	0.0047µF,1kV
		C5102	QCZ0339-101Z	C CAPACITOR	100pF,1kV
		C5104	QEKJ1HM-105Z	E CAPACITOR	1µF,50V
		C5105	QFN31HJ-183Z	M CAPACITOR	0.018µF,50V
		C5106	QCBB1HJ-271Y	C CAPACITOR	270pF,50V
		C5107	QFV91HJ-104Z	MF CAPACITOR	0.1µF,50V
		C5202	QETN1CM-108Z	E CAPACITOR	1000µF,16V
		C5203	QEMT1AM-128	E CAPACITOR	1200µF,10V
		C5204	QETJ2AM-475Z	E CAPACITOR	4.7µF,10V
		C5206	QEKJ1CM-476Z	E CAPACITOR	47µF,16V
		C5207	QEKJ1CM-107Z	E CAPACITOR	100µF,16V
		C5301	QEKJ1CM-107Z	E CAPACITOR	100µF,16V
		C5303	QEKJ1CM-107Z	E CAPACITOR	100µF,16V
		C5305	QFVF1HJ-274Z	MF CAPACITOR	0.27µF,50V
		C5307	QEKJ1CM-476Z	E CAPACITOR	47µF,16V
		C5308	QEKJ1CM-107Z	E CAPACITOR	100µF,16V
		C6006	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		C6008	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		C6013	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		C6014	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		C6016	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		C6037	QEKJ1HM-106Z	E CAPACITOR	10µF,50V
		C6501	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
		C6502	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		C6701	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		C6703	NDC21HJ-221X	C CAPACITOR	220pF,50V
		C6704	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		C6707	NDC21HJ-470X	C CAPACITOR	47pF,50V
		C6708	NDC21HJ-8R0X	C CAPACITOR	8pF,50V
		C6709	NDC21HJ-2R0X	C CAPACITOR	2pF,50V
		C6713	NCF21CZ-224X	C CAPACITOR	0.22µF,16V
		C6714	NCB21HK-222X	C CAPACITOR	0.0022µF,50V
		C6715	QEKJ1HM-225Z	E CAPACITOR	2.2µF,50V
		C6716	NCB21HK-222X	C CAPACITOR	0.0022µF,50V
		C6717	QEKJ1HM-225Z	E CAPACITOR	2.2µF,50V
		C6719	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
		C6720	QEKJ1EM-106Z	E CAPACITOR	10µF,25V
		C6721	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		C6723	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		C7011	QEKJ0JM-476Z	E CAPACITOR	47µF,6.3V
		C7013	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		C7014	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		C7114	QETN0JM-477Z	E CAPACITOR	470µF,16V
		C7119	NCB21HK-681X	C CAPACITOR	680pF,50V
		C7120	NCB21HK-681X	C CAPACITOR	680pF,50V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C7128	QEKJ0JM-107Z	E CAPACITOR	100µF,6.3V
		C7133	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		C7164	NCB21HK-681X	C CAPACITOR	680pF,50V
		C7165	NCB21HK-681X	C CAPACITOR	680pF,50V
		C7197	NCB21HK-103X	C CAPACITOR	0.01µF,50V
		L1	QUY153-050Y	IM BUS WIRE	
		L3	QQL29BJ-100Z	P COIL	10µH
		L5	QQL29BJ-100Z	P COIL	10µH
		L6	QQL29BJ-100Z	P COIL	10µH
		L7	QQR0967-001	CHOKE COIL	12µH
		L10	QQL29BJ-100Z	P COIL	10µH
		L201	QQL071J-150Y	INDUCTOR	15µH
		L202	QUY153-050Y	IM BUS WIRE	
		L203	QQL071J-270Y	INDUCTOR	27µH
		L204	QUY153-050Y	IM BUS WIRE	
		L2001	QUY153-050Y	IM BUS WIRE	
		L2201	QUY153-050Y	IM BUS WIRE	
		L2202	QUY153-050Y	IM BUS WIRE	
		L2251	QQL29BJ-100Z	P COIL	10µH
		L2252	QQL29BJ-151Z	P COIL	150µH
		L3001	QQL231J-100Y	INDUCTOR	10µH
		L3002	QUY153-050Y	IM BUS WIRE	
		L4001	QUY153-050Y	IM BUS WIRE	
		L5201	PELN1184	CHOKE COIL	33µH
		L5202	PELN1184	CHOKE COIL	33µH
		L6001	QQL29BK-1R0Z	P COIL	1.0µH
		L6002	QQL29BK-1R0Z	P COIL	1.0µH
		L6501	QQL29BK-1R0Z	P COIL	1.0µH
		L6502	QUY153-050Y	IM BUS WIRE	
		L6701	QUY153-050Y	IM BUS WIRE	
		L6702	QQL231J-3R3Y	INDUCTOR	3.3µH
		L7107	QQL29BJ-100Z	P COIL	10µH
		L7113	QUY153-050Y	IM BUS WIRE	
		L7114	QUY153-050Y	IM BUS WIRE	
	⚠	CP3002	NMFZ012-1R0X-M	FUSE	T1.0A,50V
	⚠	CP4002	NMFZ012-1R0X-M	FUSE	T1.0A,50V
		DI7001	LTG-Y2K16M-02J	LED	
		FC5001	QNG0006-001Z	FUSE CLIP,FOR F5001	
		FC5002	QNG0006-001Z	FUSE CLIP,FOR F5001	
		J7103	QNN0552-001	PIN JACK,REAR OUT	
		J7104	QNN0552-001	PIN JACK,REAR IN	
		J7105	QNN0381-002	PIN JACK,FRONT IN	
		JS3001	QSW0954-002	ROTARY ENCODER	
		K5101	QQR0678-001Z	FERRITE BEADS	
		K5102	QUY153-050Y	IM BUS WIRE	
		K6701	NQR0200-003X	FERRITE BEADS,AVSUP	
		K6702	NQR0200-003X	FERRITE BEADS,ANA_IN+	
		K6703	NQR0200-003X	FERRITE BEADS,IIC_CLK	
		K6704	NQR0200-003X	FERRITE BEADS,IIC_DATA	
		K6705	NQR0200-003X	FERRITE BEADS,DVSUP	
		K6706	NQR0200-003X	FERRITE BEADS,AHSUP	
	⚠	LF5002	QQR0978-001	LINE FILTER	
		PC3001	RPI-304J	IC(PHOTO SENSOR),SP REEL	
		PC3002	RPI-304J	IC(PHOTO SENSOR),TU REEL	
	⚠	PC5101	PC123Y22	IC(PHOTO COUPLER)	
		S3001	QSW0602-004	PUSH SWITCH,REC.SAFETY	
		S7002	QSW0456-002Z	TACT SWITCH,POWER	
		S7003	QSW0456-002Z	TACT SWITCH,PR-	
		S7004	QSW0456-002Z	TACT SWITCH,REW	
		S7006	QSW0456-002Z	TACT SWITCH,FWD	
		S7010	QSW0456-002Z	TACT SWITCH,REC	

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		S7011	QSW0456-002Z	TACT SWITCH,PAUSE	
		S7013	QSW0456-002Z	TACT SWITCH,STOP/EJ	
		S7015	QSW0456-002Z	TACT SWITCH,PLAY	
		S7017	QSW0456-002Z	TACT SWITCH,PR+	
		T2051	PELN0832	OSC TRANS	
	⚠	T5001	QQS0186-001	SW TRANSF	
		TP106	QUY160-060Y	IM BUS WIRE,PB FM	
		TP111	QUY160-060Y	IM BUS WIRE,D.FF	
		TP2253	QUY160-060Y	IM BUS WIRE,A.PB FM	
		TP4001	QUY160-060Y	IM BUS WIRE,CTL.P	
		TP7001	QUY153-050Y	IM BUS WIRE,TEST	
		TPGND	QUY153-050Y	IM BUS WIRE,TPGND	
		TU6001	QAU0236-001	TUNER,MECOM 4IN1	
		X1	QAX0740-001	CRYSTAL,PAL	4.433619MHz
		X2	QAX0739-001	CRYSTAL,NTSC	3.579545MHz
		X3001	QAX0445-001	CRYSTAL,32K ADJ	
		X3002	QAX0527-001	CRYSTAL,10M	
		X6701	QAX0443-001	CRYSTAL,18.432M	
		SD1	LP21105-002A	SHIELD CASE,FOR P/R	
	⚠	TB1	LP20316-010A	TERMINAL BOARD	
		ET1	PQ21623-2-5	EARTH PLATE(RF),FOR TUNER	
		HS1	LP40090-001A	HEAT SINK,FOR Q5101	
		OT1	QYTDST3006Z	TAP SCREW,FOR Q5101	
		FW7106	QUM022-30A4A4	PARA RIBON WIRE,CN3007	
		CN1	QGF1201C2-09	FPC CONNECTOR,NEW 9PIN	
		CN2001	QGF1207C1-06	FPC CONNECTOR,A/C HEAD	
		CN2002	QGB2532J1-02	B TO B CONNECTOR,FE HEAD	
		CN3001	QGB2032M4-12	B TO B CONNECTOR,CAP+DRUM M	
	⚠	CN5001	QGA7901C3-02	W TO B CONNECTOR,POWER CORD	
	⚠	F5001	QMF51E2-2R0-J1	FUSE	T2.0A,AC250V

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A/C HEAD BOARD ASSEMBLY <12>

	PW1	LPA10158-01A1	A/C HEAD BOARD ASSY

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LOADING MOTOR BOARD ASSEMBLY <55>

	PW2	LPA10158-01A2	LOADING MOTOR BOARD ASSY

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L BATT BOARD ASSEMBLY <93>

	PW4	LPA10088-01A4	L BATT BOARD ASSY
	BT3001	QNZ0032-001	BATTERY HOLDER

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

JVC

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